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ROGERS PASS ENVIRONMENTAL  
ASSESSMENT PANEL

PUBLIC MEETINGS

CP RAIL ROGERS PASS DEVELOPMENT PROJECT

PLACE: Revelstoke, B.C.

DATE: June 8, 1983.

VOLUME: I

OFFICIAL REPORTERS

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1 ROGERS PASS ENVIRONMENTAL  
2 ASSESSMENT PANEL  
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5 In the matter of Public Meetings of the  
6 Environmental Assessment Panel on CP  
7 Rail's proposed new track development  
8 in Rogers Pass.

9  
10  
11 PANEL MEMBERS:

12 P.J. Paradine -- Chairman

13 Dr. W. Ross

14 Mr. G. Tench

15  
16  
17  
18 Held in the Community and Recreation Centre,  
19 Revelstoke, British Columbia, on Wednesday,  
20 the 8th day of June, 1983, at the hour of  
7:00 p.m., Local Time.





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1 ---Upon Commencing at 7:10 p.m.

THE CHAIRMAN (MR. PHIL PARADINE):

Good evening, ladies and gentlemen. I am Phil Paradine, Chairman of the Environmental Assessment Panel appointed to consider the environmental and social effects of the CP Rail proposal to twin and construct tunnels through Rogers Pass and Glacier National Park.

The other members of my team are Bill Ross and George Tench. This is the final round of meetings, the purpose of which is to advise the Minister of Environment on the means by which this project can proceed in an environmentally sound manner. This is being done in accordance with terms of reference provided to us by the Minister of Environment, copies of which are in our preliminary report and I believe copies of that are available at the back of the room.

Subsequent to our preliminary report last year, CP Rail presented further information in April of this year. This has been available to the public, and we are now asking that participants in the review present their views and opinions on how this project may proceed in an environmentally safe manner.

Following these meetings, the  
panel will be preparing its final report to the Minister.  
We also will be holding meetings in Golden and  
Calgary.





I guess at this point I should reiterate that CTC has, in principle, approved this project and that the mandate of the panel is to ensure the project proceeds in a way that minimizes the impact on the environment. That is the sort of information we are seeking for our report.

If you want copies of the report or additional information, please leave your name at the back of the room there. Somebody will take that information for you.

The meeting procedures have been distributed, and I will not go into detail. I am asking speakers to try to limit their comments to 20 minutes and then we can get into questioning to clarify any information that has been put forward by speakers. We are making transcripts, and therefore I ask that you identify yourself and the organization that you represent if you come forward to speak. You can either use the microphone at the front if you are asking a question, or if you want to sit down to use the full 20 minutes, you can come up here at the front and probably sit down if you have got some papers that you would like to spread out.

We will be having a coffee break near the middle of the session, and the schedule today is that following my brief remarks here, John Fox of CP Rail will be making a presentation, following which we have an overview statement from Parks Canada, Bruce Leeson, I believe, and a detailed





1 presentation by Mr. McKnight. We then have Mr.  
2 McCrory, I believe, registered to speak. So without  
3 further ado, I think I should go to John Fox.  
4 So that if you wish to register to speak or indicate  
5 that you have a long presentation to make, please  
6 let Suzanne Latour know at the back of the room.  
7 If you just want to speak on an ad hoc basis after  
8 we have gone through the registered speakers, you will  
9 be able to come up here and use the microphone. I  
10 will be calling for questions from the floor.  
11

12 So without further ado, I would  
13 like to pass the microphone over to CP Rail and Mr.  
14 Fox for his statement. Perhaps you would like to  
15 introduce anybody you wish to on your team.  
16  
17  
18  
19  
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21  
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29  
30





1 (Fox)

MR. JOHN FOX (CP RAIL): Thank you, Mr.

3 Chairman. Good evening, ladies and gentlemen. I  
4 am John Fox and I am Vice-President of Engineering,  
5 Special Projects for CP Rail. My cohort on my  
6 right is Meryl Klassen, who is my Design Engineer  
7 in Calgary, and seated in the first two rows in front  
8 of me here are so many guys I am not going to bother  
9 introducing. They are all consultants and I pay them.  
10 So they can introduce themselves when they get up  
11 here.

We have a rather extensive

display, as you can see, around the room, and for  
those of you who are perhaps in the engineering world  
or construction world, it will tell you something  
hopefully. Others are pretty pictures of buildings  
and things like that, but they all mean something  
in the total context of what it is we propose to do  
in the Roger's Pass area.

At the back of the room where  
Suzanne is, there is a red book, if you have not  
already picked one up, and this goes through very  
briefly the entire project with the exception perhaps  
of the nine mile tunnel. In addition to that, there  
is a little red folder also on the table, and if  
you pick this up and go through it with the display,  
which you can do at coffee break if you  
are so inclined, and if you will note on the posters,  
you will see letters and they refer to a little bit





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5

(Fox)

1 of a description in this particular folder. So that  
2 might help you understand what we have on the board.

3 I propose tonight to give you  
4 a very general overview of what we have done and  
5 what we propose, and then I will turn it over to  
6 the next speaker. Last year I gave a rather lengthy  
7 discussion of our proposal, where it was, what we  
8 needed it for, et cetera, et cetera. I do not  
9 propose to go through that again. If anyone that  
10 missed it wishes to have it, it is in the proceedings  
11 of this hearing.

12 Mr. Chairman, ladies and  
13 gentlemen, the Federal Environmental Assessment  
14 Review Officer interim decision in May last year  
15 allowed us to proceed with the portal construction  
16 for the Rogers Pass tunnel and clearing of the  
17 surface route for an access road to carry out further  
18 environmental and geotechnical investigations.

19 The west portal structure was  
20 completed last year, and repaving of the Trans Canada  
21 Highway is presently being completed. Access to the  
22 east portal and the retaining walls at the east  
23 portal were completed last year and rock  
24 excavation is presently underway. This should be  
25 finished within the next four to five weeks.

26 The surface route from Rogers to  
27 the east portal of the short tunnel was cleared  
28 for the investigations to be described later.

29 As you have seen by the reports

30





1                   (Fox)

2       we have presented to you and the responses we have

3       made to your further requests for information,

4       CP Rail has done a very large amount of work in the

5       14 months since the meeting of last April. I feel

6       that we have more than adequately met or exceeded

7       the requirements for further information requested

8       by you and Parks Canada. I am looking forward to

9       these meetings to allow us to thoroughly present the

10      information to you and the public. We appreciate

11      the opportunity to describe and discuss work completed

12      to date and to demonstrate our commitment to complete

13      the Rogers Pass Project with the highest level of

14      concern for the environment of Glacier National Park.

15

16                  I might also add there that

17      those are not just words. That is a commitment.

18                  I am also looking to these meetings

19      to serve as a forum to answer any and all questions

20      that the panel, their experts and Parks Canada may

21      have on environmental, engineering or commitment

22      issues. We have available for these hearings all

23      the experts who have worked with CP Rail over the

24      last year and in many cases since the beginning of

25      the project. We have done this to ensure that as

26      many requests for information as possible can be

27      answered during the hearings.

28                  The report entitled "Rogers Pass

29      Project: Submittal to Federal Environmental

30      Assessment Review Office" dated June 1983 was

(



1                   (Fox)

2                   prepared specifically for this hearing.

3                   In this report and all the other  
4                   environmental and engineering reports previously  
5                   submitted to you, we have made every attempt to  
6                   respond to all expressed concerns. I also believe  
7                   that we have responded to both the panel's and  
8                   Parks Canada's recent requests for further environ-  
9                   mental information.

10                  Our basic approach has been to  
11                  define terms of reference for all studies through  
12                  discussions with Parks Canada. When work was  
13                  completed in mid-February of this year, we asked  
14                  Parks Canada and their experts to come to a workshop  
15                  to discuss results of all studies and to ask for  
16                  their comments and suggestions. We then submitted  
17                  draft copies of all reports to Parks Canada prior  
18                  to finalizing them for the Fearo Review. We have  
19                  responded to Parks Canada's subsequent comments, as  
20                  well as to a list of items which the panel indicated  
21                  were not addressed completely, either verbally or  
22                  in reports submitted prior to this meeting.

23                  I do not plan to elaborate on  
24                  all the environmental studies we have conducted, as  
25                  I have consultants here who are more able to discuss  
26                  the technical details, and who will do so in the  
27                  appropriate sessions. However, I would like to give  
28                  you a brief summary of the work we have done in  
29                  preparation for this public meeting and the work





1                   (Fox)

2                   we will be doing in the future to ensure that when the  
3                   new railway is built it will respect the national  
4                   park through which it passes.

5                   Requests for further information  
6                   have come from two sources: the panel in their  
7                   preliminary review last April, and Parks Canada in  
8                   meetings since that time. The panel's requests were  
9                   grouped into five aspects of the project: the  
10                  Rogers Pass tunnel, the ventilation shaft, the  
11                  surfact route, the work force, and the responsibility  
12                  for mitigative measures and monitoring.

13                  Looking at the questions on the  
14                  Rogers Pass tunnel first, the proposed new track will  
15                  pass through one avalanche path, and that is the  
16                  Ross Peak slide. That is located at the west portal  
17                  of the Rogers Pass tunnel. Automatic train signals  
18                  will govern trains at this location, enabling a  
19                  westward train to stop within the portal structure, if  
20                  required. Eastward trains will stop clear of the west  
21                  perimeter of the Ross Peak slide, if required. I  
22                  should say this is done by dispatchers just by  
23                  flicking a switch.

24                  The existing program of working  
25                  with Parks Canada and the Canadian Army to control  
26                  avalanches by means of gunfire will be continued.  
27                  Procedures now used in controlling train movements  
28                  in affected areas will also be continued.

29                  With regard to disposal of  
30





1 (Fox)

material, Parks Canada has stipulated no spoiling and no borrowing within the park boundary, so we have come up with the following general approach: balanced cuts and fills on the surface route east of the tunnels and the use of a minor amount of material as subgrade for double tracking to the west down as far as Flat Creek.

Concern was raised for the environmental effects of the double tracking to the west, so our environmental consultants identified potential concerns in a report directed to the panel.

Water use and waste water treatment have received considerable study in the past year. Basically, we will need water for three purposes: tunnel drill cooling and lubrication, cement plants, and camp operation.

20                    We need water for drilling at  
21                    both portals of the Rogers Pass tunnel, the  
22                    ventilation shaft and at the west portal of the  
                      short tunnel.

We plan to pipe water from the  
Beaver River at the east portal of the Rogers Pass  
tunnel. Water for the west portal of the short  
tunnel will come from Connaught Creek. A small  
stream will supply water for the ventilation shaft,  
and water for the west portal will come from the  
Illecillewaet River.





1                   (Fox)

2                   After use, this water will be  
3                   treated in an oil separator and settling ponds  
4                   before being released into the Beaver or the  
5                   Illecillewaet or the small stream near the  
6                   ventilation shaft.

7                   We have outlined a monitoring  
8                   and contingency system to ensure that the water  
9                   treatment system works as designed. This system is  
10                  described in the report submitted to these hearings.

11                  Final proposed sites for settling  
12                  ponds were based on reactions of Parks Canada to our  
13                  report submitted to them in March, in which we  
14                  identified several possible sites at each location.

15                  Another use of water will be for  
16                  the cement batch plant which we propose to locate  
17                  at Glacier. A full description of the plant, its  
18                  operation and pollution controls has been given in  
19                  the report submitted to these hearings.

20                  Water will also be required for  
21                  camp operations. The water will be released after  
22                  treatment, into the source rivers.

23                  The location of the ventilation  
24                  shaft was one of the most controversial topics at  
25                  the last hearings. At the hearings, I proposed an  
26                  alternative location for detailed investigation. A  
27                  further alternative site has been selected and approved  
28                  by Parks Canada. Access to the site has been  
29                  constructed and the site cleared for detailed





1       (Fox)

2       geotechnical investigations.

3                   Air quality studies submitted  
4       separately verified the quality of tunnel emissions  
5       was acceptable and within the federal guidelines.  
6       A study of the noise associated with ventilation  
7       operations confirmed that the noise levels would not  
8       adversely affect the public in the park environment.  
9       Concern has been raised for the visibility of this  
10      structure, so we have conducted studies to see if  
11      and from where it would be visible to users of the  
12      park.

13                  This study will be fully described  
14      in Calgary at the designated session by our visual  
15      assessment consultant. However, I would like to  
16      briefly summarize what we found.

17                  We conducted experiments by  
18      tethering red balloons at the proposed locations and  
19      elevation of the tops of the vent stacks in the  
20      existing clearing. We found that only the top few  
21      feet of the two stacks could possibly be seen from  
22      various viewpoints.

23                  The Rogers Pass surface route  
24      design was a process using all available techniques  
25      and mitigative measures to develop a realistic  
26      design that respects the integrity of existing  
27      environment and the highest engineering practice.  
28      During this process, CP Rail engineers worked in  
29      close collaboration with landscape architects and





1           (Fox)

2           reclamation specialists to develop optimum environ-  
3           mental and engineering solutions. The following  
4           were considered:

5                 1) Geometrical: maximum  
6                 horizontal curvature of six degrees, maximum grade  
7                 of one percent compensated on curves at the rate of  
8                 0.04 percent per degree of curve.

9                 2) Hydrological: adequate  
10                clearance and bridge design at stream crossings  
11                considering both anticipated river discharges and  
12                debris flows.

13                 3) Geotechnical: slope stability,  
14                groundwater control and soil preparation, design of  
15                cut and fill slopes and retaining structures.

16                 4) Environmental: minimal  
17                visual impact and minimal overall terrain impact.

18                 5) Construction: feasibility of  
19                completely balancing earth quantities within the  
20                park.

21                 6) Existing Topography: steep  
22                slopes and some landslide areas.

23                 7) Climatic Conditions: ground-  
24                water clearances and frost protection.

25                 8) Schedules: coordination of  
26                activities.

27                 9) Structural Adequacy: this  
28                will be a permanent facility.

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(



1                   (Fox)

2                   the surface route encompassed both engineering and  
3                   environmental studies. The hydrological aspects of  
4                   stream crossings were investigated in detail with  
5                   design considerations developed for both water and  
6                   debris flows.

7                   Three landslide areas have been  
8                   identified and have been investigated. These include  
9                   the Griffith Landslide, an unnamed landslide, and  
10                  what is referred to as the wet slide area. These  
11                  will be discussed in detail in the Calgary technical  
12                  sessions.

13                  Primary consideration was given to  
14                  designing the railway to meet railway standards.  
15                  However, within this constraint environmental  
16                  considerations had the most important influence on  
17                  selection of the proposed design and detailed route  
18                  location.

19                  Despite the engineering constraints  
20                  to maintain structural and overall adequacy, the  
21                  alignment and design were modified to minimize the  
22                  visual impact of the completed railway. Environmental  
23                  considerations and potential impacts generally  
24                  decided the proposed design and location. Reclamation  
25                  procedures, balancing earth quantities and schedules  
26                  to meet environmental requirements were developed.

27                  One major part of our work over  
28                  the past year has been reducing the visual impact  
29                  of this project to the minimum practicable by





1                   (Fox)

2                   combining engineering requirements with landslide  
3                   architecture and reclamation techniques. Our  
4                   results are shown on the side panels.

5                   In order to fully appreciate  
6                   the potential visual implications of the new surface  
7                   route in the Beaver River Valley, we undertook what is  
8                   probably the most comprehensive visual impact  
9                   assessment ever done in Canada. We will fully describe  
10                  that procedure in the scheduled presentation in  
11                  Calgary on Saturday. However, I would like to  
12                  briefly outline the interactive process between  
13                  CP Rail and its consultants to minimize to as much  
14                  as possible the visibility of this track after our  
15                  reclamation is complete.

16                  The first step was to develop a  
17                  complete inventory of all the visual fixed features  
18                  as seen by eastbound and westbound travellers on the  
19                  Trans Canada Highway. This provided us with some  
20                  interesting results. First, we realized that the  
21                  landscape is visually diverse and complex, so it has  
22                  a moderate to moderately high capability of  
23                  visually absorbing disturbances. We were also able  
24                  to identify those sections of the valley that were  
25                  the most visually sensitive from the perspective of  
26                  park visitors using the Trans Canada Highway.

27                  The use of computer-aided  
28                  methods made it possible to develop five different  
29                  designs, each one a refinement of its predecessor.





1                   (Fox)

2                   The refinement process focussed on the visually  
3                   sensitive areas and consisted of making adjustments  
4                   to the alignment to reduce cuts and fills as well as  
5                   locating numerous retaining walls and bridge  
6                   structures. Parks Canada reviewed the fourth design  
7                   in detail and gave us comments which we incorporated  
8                   into the final design.

9                   The result of this process was  
10                  a significant reduction in the potential for adverse  
11                  visual impacts.

12                  In summary, then, the alignment  
13                  that we present to you is the most refined of all the  
14                  designs and is our best possible effort to protect  
15                  the visual integrity of Glacier National Park, while  
16                  meeting the engineering requirements of a high  
17                  capacity rail line.

18                  With the input from the visual  
19                  impact assessment, the environmental studies and the  
20                  engineering studies, we have also prepared a plan  
21                  for the reclamation of the cuts and fills along the  
22                  surface route at the Beaver River Valley. The  
23                  reclamation program has been integrated with the  
24                  engineering plans to provide the very best program  
25                  possible. It has been designed to provide for the  
26                  rapid revegetation of exposed slopes, as well as  
27                  for the establishment of a permanent cover of trees  
28                  and shrubs native to Glacier National Park.

29                   We will be taking special





1                   (Fox)

2                   measures to ensure that erosion is controlled and  
3                   that reclamation is conducted as quickly as possible.  
4                   Our consultant has been conducting a number of  
5                   reclamation trials and tests in the Beaver River  
6                   Valley, and we are confident that he has developed  
7                   procedures that will permit us to effectively reclaim  
8                   the disturbed areas.

9                   I will not go further into the  
10                  details of the program now, as we will be presenting  
11                  these on Saturday in Calgary. However, I would like  
12                  to point out that we are committed to providing the  
13                  best possible reclamation of the disturbed areas. It  
14                  is this commitment to excellence throughout the  
15                  whole job that allows me to assure you that the  
16                  landscape will be reclaimed to a state that respects  
17                  the goals of Glacier National Park.

18                  The right-of-way required was  
19                  determined from the slope stake information along the  
20                  proposed design. The right-of-way was established  
21                  by locating it a minimum of 30 feet away from the  
22                  slope stake limit. Clearing will extend to ten feet  
23                  outside the slope stake limit. One hundred and fifty-  
24                  eight acres will be cleared inside the park. In  
25                  total, we require some 316 acres of property from  
26                  Glacier National Park.

27                  In response to the concern that  
28                  downstream aquatic environments could be affected  
29                  by surface runoff during and after construction, we





1                   (Fox)

2                   conducted a study in 1982 to establish monitoring  
3                   criteria. The results of that study are presented  
4                   in our report submitted to the panel, and I will not  
5                   elaborate on them at this point. This study will be  
6                   discussed in the Calgary technical session.

7                   The surface route construction  
8                   and reclamation will take place during the summers of  
9                   1984 and 1985, except for the elevated deck structure,  
10                  which will be installed in the summer of 1986.

11                  Having said that, I hope the crow rate is fixed.

12                  All other construction will  
13                  begin in the spring of 1984, with scheduled completion  
14                  in November of 1988. CP Rail has developed and  
15                  separately submitted construction procedures for the  
16                  surface route.

17                  We have gone into some detail in  
18                  the report on the procedures for handling toxic or  
19                  hazardous substances. However, I will simply state  
20                  here that we will specify in our contract documents  
21                  that all contractors must meet federal guidelines  
22                  for storage, handling and transportation of all  
23                  fuels and other chemicals. Contingency measures must  
24                  be put in place to avoid any negative environmental  
25                  effects in the event of accidents. The environmental  
26                  coordinator will have the authority to ensure that  
27                  standards are maintained.

28                  During the operation of the  
29                  railway, CP Rail has strictly enforced procedures  
30

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(



1                   (Fox)

2                   that are followed when dangerous commodities are  
3                   transported anywhere on the rail network.

4                   Passenger train speed on the  
5                   new main line will be 30 miles per hour maximum.  
6                   Heavy bulk commodity trains will generally be  
7                   travelling at approximately 15 miles per hour. At  
8                   this speed, a derailed car will probably remain on  
9                   the grade, thus maximizing the probability of a toxic  
10                  spill.

11                  Having said that, the question of  
12                  toxic spills from derailments has been the subject  
13                  of intensive investigation, particularly by the  
14                  Canadian Transport Commission at hearings that lasted  
15                  well over a year, and from that hearing has come  
16                  very extensive and intensive regulations as to how  
17                  you do things and what you do, and those are what  
18                  the railway follows.

19                  Electric power for the  
20                  ventilation system and tunnel lighting will be brought  
21                  in from Revelstoke on a 34.5 kv transmission line.  
22                  The power circuit will be run along CP's right-of-  
23                  way in an underground trench within the confines  
24                  of the National Park. The buried cable trenches  
25                  will be located in the ditch within the CP Rail  
26                  right-of-way.

27                  Concerns passed that the second  
28                  track may result in more moose collision deaths of  
29                  moose caused us to do a detailed study of moose  
30





1 (Fox)

movements this past winter. In brief, we found that there may be less than ten moose in the Beaver Valley in Glacier National Park and if there is a potential problem, it is likely to occur primarily at Mountain Creek. However, the conclusive evidence indicates that the major threat to moose is from the highway, not from the railway. Our consultant has proposed mitigative measures which we hope Parks Canada, who are responsible for managing the moose in the park, will consider.

12 Work Forces. CP Rail requested  
13 permission to construct work camps at Flat Creek  
14 and at the Beaver Valley gravel pit, both of which  
15 are two previously disturbed sites. Concerns were  
16 expressed that the camps at these sites would have  
17 detrimental effects on caribou and grizzly bears.  
18 We prepared a detailed report on the subject.

Basically our biologist concluded  
that the Flat Creek camp could have a minimal effect  
on the small caribou population. However, they did  
indicate that unless very strict management is  
followed through, bears could be a problem. We have  
taken their advice into consideration in our design  
and have asked Dr. Stephen Herrero to provide us  
with advice on bear management considerations. Dr.  
Herrero will attend the session on Friday night in  
Calgary. Despite general agreement from Parks  
Canada on the conclusions of that report, they have





1                   (Fox)

2                   recently advised us they will oppose campsites within  
3                   the park. We have investigated camps outside the  
4                   park, as well as alternatives within the park.

5                   We have indicated in the report  
6                   submitted to this hearing that the prohibitive costs  
7                   of locating outside the park are not justified for  
8                   the reasons given by Parks Canada. For economic  
9                   reasons, therefore, we request that the camps be  
10                  approved in the park as originally agreed to by  
11                  Parks Canada in their statement to this panel last  
12                  year. Details on the camps will be discussed in the  
13                  session Friday evening in Calgary.

14                  In addition to the studies carried  
15                  out in response to the panel's requests, we have  
16                  also undertaken several studies to answer questions  
17                  raised by Parks Canada at or since the hearings last  
18                  April.

19                  At the hearings, we were asked  
20                  to see if there were any raptor nests along the  
21                  right-of-way and to determine if the elk seen by  
22                  Canadian Wildlife Service personnel were still at  
23                  Stony Creek. These studies were requested prior to  
24                  clearing the surface route or building the access  
25                  road at Stony Creek. In surveys conducted  
26                  immediately after the hearings, no raptor nests were  
27                  found on or near the route and it appeared that the  
28                  elk had left some time before the survey. With that  
29                  information, Parks gave us permission to build the





1                   (Fox)

2                   access road, and I might add we got that permission  
3                   after we signed a mutually acceptable agreement.

4                   Prior to clearing the access  
5                   road, biologists conducted vegetation and wildlife  
6                   surveys. These are summarized in the report tabled  
7                   for these hearings. The vegetation information  
8                   will be used as a catalogue for the reclamation  
9                   plan to ensure that continuity with the surrounding  
10                  vegetation is eventually achieved.

11                  The Fearo Panel concluded last  
12                  June that a committee concentrating on  
13                  environmental issues was required. An environmental  
14                  coordinator was also specified and one has been  
15                  employed since shortly after the Fearo hearings.

16                  The committee structures in  
17                  place are as follows:

18                  A steering committee is  
19                  responsible to sanction all plans, ensure that all  
20                  items are dealt with in a timely manner and act as  
21                  an arbitrator.

22                  An Environmental Committee ensures  
23                  that conditions established by the Fearo Panel are  
24                  carried out and approves environmental aspects of  
25                  plans.

26                  Design Committee reviews design  
27                  before and during construction to ensure that it is  
28                  environmentally acceptable.

29                  The Implementation Committee deals  
30





1                   (Fox)

2         with problems that may arise, serves as a formal  
3         communication medium for its members, solves day-  
4         to-day problems and seeks guidance from the Environ-  
5         mental Committee.

6                   It is proposed to maintain the  
7         above committee structures for the construction  
8         project.

9                   The role of the environmental  
10         coordinator is to serve as the day-to-day contact  
11         for park wardens and other inspectors and ensure  
12         that construction operations are carried out by the  
13         contractors using good environmental practices and in  
14         accordance with agreements reached by the committee.

15                  A complete monitoring program has  
16         been developed for tunnel effluent, sewage treatment,  
17         visual considerations, reclamation and work camp  
18         monitoring.

19                  CP Rail has demonstrated its  
20         interest in environmental protection by producing a  
21         number of exhaustive studies in response to  
22         concerns of Fearo and Parks Canada.

23                  State-of-the-art technology was  
24         used to allow environmental planners, reclamation  
25         specialists and engineers to work in an interactive  
26         way to produce a design that will minimize terrain  
27         and visual impact.

29                  This dedication to the various  
30         mitigation measures outlined in this report





1           (Fox)

2           will continue throughout the construction phase and  
3           subsequent reclamation. An extensive monitoring  
4           program, erosion contingency measures and  
5           adherence to the highest standards of environmental  
6           protection will assure construction of a second track  
7           that respects the natural integrity of Glacier  
8           National Park.

9                                  Thank you very much.

10

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PM-2-B

(Leeson)

1) C. P. Rail's commitment  
to achieve environmental protection:

"to at least the standards recommended by the consultants"

which is from Page 104 from the Red Book,

"is a very important condition of approval to proceed."

Parks Canada requests the Panel to be precise and explicit in applying this covenant to any construction approvals:

2) Parks Canada is opposed

to the located of the work camps in Glacier National Park particularly since those camps have increased from two 250-man camps to a 420 and 460-man camp each. Parks Canada requests the Panel not to approve this proposal and that C. P. Rail be required to locate their camps outside of Glacier National Park.

3) The extent of terrain disturbance is a continuing point of concern. As indicated in our May 11, 1983 Report, Parks Canada has reached the limit of our ability to evaluate further the technical potential to reduce the size of fills with alternate construction methods. We note that Mr. Herwoods in his written review requests specific information regarding "alternatives considered to reduce the right of way with requirements at the locations of





major cuts and fills".

2 Parks Canada requests the Panel  
3 to be diligent in ensuring the very best is being  
4 proposed and will be done to minimize terrain impact.

5    4) Parks Canada is satisfied  
6    that C.P. Rail has selected the best tunnel vent  
7    location. We are also prospective that the physical,  
8    visual appearance and auditory impact of that  
9    facility has been minimized to an acceptable level.

I cannot over emphasize the  
importance which Parks Canada places on this  
subject and I alert the proponent of the determination  
and diligence Parks Canada will exercise in seeking  
satisfactory reclamation of disturbed environments.





(Leeson)

Parks Canada requests C. P.  
2 Rail's reaffirmation and description of their  
3 reclamation commitment before this Panel, and Mr.  
4 Fox has already referred to that in his earlier  
5 presentation, and we request this Panel's application  
6 of that commitment as an unequivocal condition  
7 of project approval. Stability of disturbed  
8 slopes is a concern. However, there is sloace  
9 in the fact that slope stability is of paramount  
10 importance to the integrity of the new rail line.  
11 Accordingly, C. P. Rail can be expected to be overly  
12 cautious in ensuring stability.

14                         6) The extent of off right-of-way  
15                         drainage required to achieve this is of concern  
16                         to Parks Canada. The proponent must not expect  
17                         that elaborate impromptu drainage schemes will be  
18                         permitted if environmental damage is threatened.





(Leeson)

1

2

and requests an explanation of alternative methods  
of bridge protection;

3

4

10) Air quality, particularly visual, in the vicinity of the vent structure continues as a concern. Parks Canada endorses, in principal, advice provided by the atmospheric environment service that an air quality monitoring program begin in 1983 or as soon as is practical. Parks Canada also requests the provision that C. P. Rail be required to ameliorate against specified air quality deterioration if monitoring should reveal that situation to develop.

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11) Parks Canada reaffirms that

burrough areas cannot be developed in Glacier National Park. Limited space to dispose of waste materials is available. Disposal in excess of that capacity must be outside the Park. C.P Rail's plans to treat tunnel-boring waste water are endorsed. We note that construction material storage will be at Rogers, outside the Park, or on the right-of-way. Construction scheduling will be important as work space is limited and loss of top dressing materials as a result of contamination or multiple handling must be avoided. Hopefully the removal of timber resources will proceed more efficiently than in 1982.





The foregoing presents Parks  
Canada's opinions and concerns for the Panel's  
and the proponent's consideration:

Parks Canada concludes that  
Glacier National Park will be significantly damaged  
by the proposal. The major impacts have been  
identified and commitments to mitigate against  
their effects are proposed. Cautious construction  
procedures and disturbed land reclamation offer  
the best hope to overcome the unavoidable impacts.

Parks Canada recommends the  
16 project be approved, in principal, but only subject  
17 to C.P. Rail's unavoidable commitment to utilize  
18 state of the art environmental protection.

Mr. Chairman those are our  
highlight concerns. Mr. Gallagher and I will be  
attending the remainder of the sessions, and at that  
time we expect to participate in detailed technical  
discussions, and, of course, we will be here for  
the rest of the evening to respond to any concerns  
that might have been precipitated by this paper.

28 THE CHAIRMAN: I expect there  
29 will be some questions on both your presentation  
30 and C.P.'s. Perhaps now, however, we might





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(McKnight)

1 proceed to the slide presentation and if we could  
2 have Mr. McKnight make that. I think we may have  
3 to turn down the lights, and if you want to give  
4 the appropriate instructions, Mr. McKnight.

5

6 MR. MIKE McKNIGHT, (Parks

7 Canada Environmental Coordinator): Mr. Chairman,  
8 Members of the Panel, Ladies and Gentlemen. My  
9 name is Mike McKnight. I am the environmental  
10 coordinator for the C.P. project. I am employed  
11 by Parks Canada and my expenses and other costs  
12 are defrayed through C.P. through a cost-sharing  
13 agreement. I have been on the project since the  
14 inception, and I was asked to make a brief  
15 presentation this evening and try to give you an  
16 idea of some of the things we have been through  
17 in the last year and some of the areas where we  
18 have succeeded and some of the things that we  
19 tried and did not work too well.

20

21 I have a text but I plan  
22 basically to speak off the cuff, if you like, and  
23 I will be generally following the text but I will  
24 not be reading it verbatim.

25

26 In the early 1970's C.P. Rail  
27 identified four key areas where grades in excess  
28 of one per cent were going to severely limit  
29 their capacity to haul freight, primarily to the  
30 west. In the fall of 1981, after constructing  
three of say easier areas at Lake Louise, Revelstoke



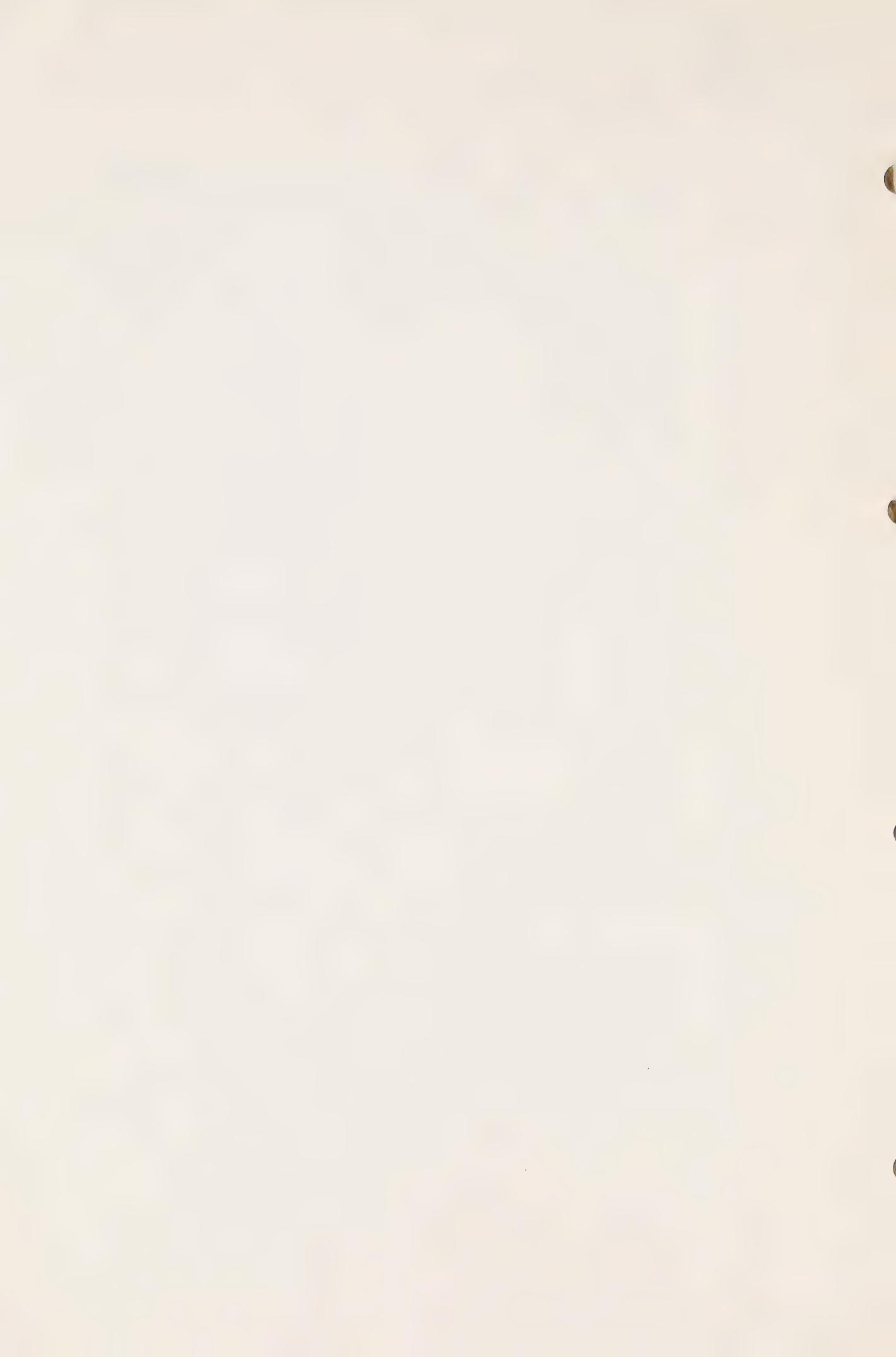


1      Salmon Arm,      they applied to the Canadian Transport  
2      Commission to build the Rogers Pass section.

The Rogers Pass section primarily falls within Glacier National Park and the alignment is from Rogers, which is located off the photograph on the east end and basically follows the line you can see. If you can see that line on there, it is the existing rail line. The new line will travel below that at a one per cent grade. The original line is in the neighbourhood of two or a greater per cent. It follows along the valley just above the valley bottom in most places. It travels off in behind the ridge here that you can see on the photograph and eventually through the tunnel under Mount McDonald.

17 So we have the one per cent  
18 alignment running to Stony Creek. It will cross  
19 under the Trans Canada Highway in the short tunnel,  
and then basically enter the long tunnel.

In February of 1982 the  
Ministry of Environment appointed the Panel you see  
here to review the work that could go on in 1982.  
The project was recognized as being nationally  
significant and the Panel was requested to identify  
the work that could take place in 1982 and also to  
identify what further information would be  
required in order that a very high level of  
environmental protection be achieved.





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32

PM-9-B

(McKnight)

The work that was approved  
for 1982 was the construction of the tunnel  
portals an access road along the surface route,  
a further study on the ventilation system. They  
approved a work camp for the Beaver Valley, and  
recommended that an environmental committee be  
established and the position I occupy as  
Environmental Coordinator be staffed before  
construction started. This was done.

Glacier National Park lies  
in the Selkirk Mountains between Golden and  
Revelstoke, and it is characterized by fairly  
dense vegetation and relatively heavy precipitation.  
The existing terrain in the Beaver Valley where  
this route was to be built was largely very steep,  
crossed very steep side hills. There are several  
very flowing streams or fast falling streams, as  
I call them -- if you stood them up another  
couple of degrees they would be waterfalls, and  
very sharp V-shaped gullies. A couple of known  
landslides were crossed that had historic problems.





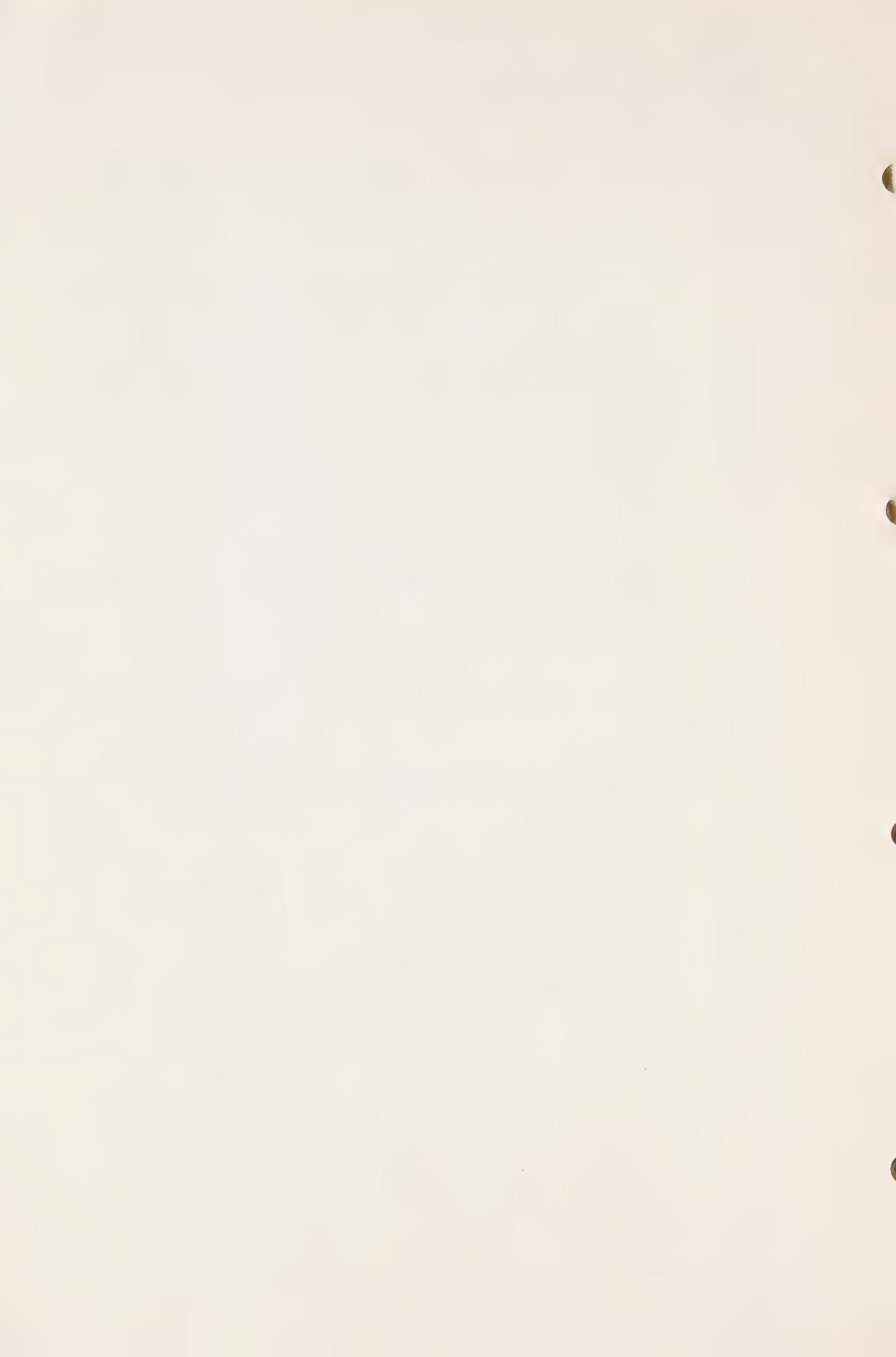
PM-10-B

(McKnight)

1 road to any kind of standard in those steep slopes  
2 on the 50 foot or 15 meter right-of-way that the  
3 Panel had recommended.

4 Parks Canada has had experience,  
5 not so much in the construction business, but in  
6 firefighting over the years. We have used cats  
7 to build fire guards and often found that the  
8 environmental damage caused by that sort of  
9 practice is excessive, primarily because you are  
10 not able to install proper drainage and install  
11 proper back slopes. So that practice in the National  
12 parks has been largely discontinued, and we no  
13 longer use cats to any great extent, and what  
14 we were faced with was a problem where we felt that  
15 we could build a skid trail through this kind of  
16 terrain, similar to what we would have called a  
17 fire guard, but we were very concerned with the  
18 stability of that; that it would not be a stable  
19 structure. Thus, we were faced with the dilemma  
20 of basically the first order of business for the  
21 Environmental Committee would be to disregard, if  
22 you like, what we felt was the primary recommendations  
23 of the Panel.

25 We did a lot of soul searching,  
26 a lot of discussion. We have an Environmental  
27 Task Force, which Doctor Leeson heads, from  
28 Environment Canada. We reviewed it with some of  
29 their people and generally decided that we would  
30 be better to go with a larger, a wider right-of-way





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(McKnight)

1 and ensure that proper back slopes were constructed,  
2 that good ditching and culverts were installed to  
3 ensure that we got the water off the right-of-way  
4 and ended up with basically a more stable railway.

5 This is some of the terrain.

6 It is difficult without walking through there  
7 to tell how steep it is.

8 Access became the next major  
9 problem. The only established access, if you  
10 like, was on the very east end of the project at  
11 Rogers. There is a road that goes down there  
12 and a substantial bridge. The bridge you see  
13 here is the small wooden bridge that provides  
14 access to our mountain creek campground, and the  
15 only other access for heavy equipment was to be  
16 hauled in on the train to the Griffiths Siding,  
17 which is just above this area and unload it. We  
18 started out with that procedure.

19 At the west end of the surface  
20 area there was an old trail that ran into what  
21 at one time was a D.P.W. construction site. It  
22 was a very low standard trail and one of the  
23 recommendations that the Panel urged was that we  
24 allow access. It was felt that it would be  
25 unreasonable to try to construct a project of this  
26 side with access at one location, basically nine  
27 miles to the far end.

28  
29 We made a detailed field  
30 inspection with the Environmental Committee. I went





out and a couple of Park Wardens went out with the C.P. Engineering people and we were able to locate an acceptable alignment through the forest. It was quite a narrow access road. We made the best use we could of the existing terrain; tried to minimize the cuts and fills for the access trail, and additionally we made a very narrow -- this was to come back and haunt us a little further down the road, because we succeeded at a high level of environmental protection, but with a 16-foot top on the road, we had some close encounters with loaded logging trucks and that was -- there are trade-offs in this business. You work very hard towards one thing and you end up with a situation where the safety was a concern.

The crossing of the creeks  
17 became the next problem we had to resolve. The  
18 access trail, the improvements, dead-ended at the  
19 right-of-way at Stony Creek, and the prime  
20 contractor had decided that he would handle the  
21 job by breaking the line up into various sections  
22 and sub-contracting those sections. As it turned  
23 out, one of the contract boundaries was right at  
24 Stony Creek. So one contractor was off to the  
25 races; he had a nice access road right to his  
26 piece of work; the other fellow ended up at the  
27 edge of the creek and his piece of work was on the  
28 other side of the creek. C.P. had, in their  
29 contract documents, specifically forbidden any type





1 of crossing of creeks or streams with track  
2 vehicles or rubber tired vehicles, and we certainly  
3 supported that, and we had some discussions with  
4 the contractors and we came up with the idea of  
5 building a temporary bridge at these crossings.  
6 They are basically just log sills on the ground,  
7 and a very rough bridge made out of native materials  
8 and held together by cables. This provided the  
9 contractor with immediate access for tracked  
10 equipment, four-wheel drives, and we were driving  
11 across this type of a bridge. It also allowed  
12 the bridge crews to have access to both sides  
13 of the creek in order to construct the abutments.  
14

15 No sooner had we solved that  
16 problem that the next one reared its ugly head.  
17 C.P. had requested or had included in their  
18 contract documents that all of their construction  
19 bridges, because they would have to carry loaded  
20 scrapers and very heavy equipment, be certified  
21 by a recognized engineer or a registered engineer.  
22 This is the Stony Creek bridge you see here, and  
23 the engineer -- the first plan that was submitted  
24 was a 60-foot span, which was on the verge of  
25 spanning the wedged perimeter but did not  
26 completely span it, and the engineer had indicated  
27 that in order to certify the bridge, he would want  
28 to have extensive channel training. They wanted  
29 to put a cat in the creek and basically dig the  
30 creek out so that the flow of the stream would be





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(McKnight)

1 definitely confined to the bridge crossing.

2 They also submitted two other  
3 plans for longer spans that he would be happy to  
4 accept or approve without the channel training.

5 Parks Canada approved both of those plans but were  
6 reluctant to approve the 60-foot span because we  
7 were not prepared to permit the channel training.

8 As you can probably imagine  
9 when you start increasing the span of a bridge  
10 like that the cost goes up rather quickly and in  
11 this case the cost went up on a very high factor,  
12 because in order to go beyond the 60-foot it  
13 required a metal-framed bridge rather than built  
14 out of log stringers.

15 So this issue was eventually  
16 resolved that C.P. did an independent look at it.  
17 They convinced us that basically the bridge  
18 structure itself would be stable at the 60-foot  
19 span, and we modified the plans for the west  
20 abutment, which you see a machine sitting on here.  
21 The wing on the abutment was angled back in this  
22 area so it presented a much better angle of  
23 approach to the creek, and some clean rock was  
24 dumped on the edge of the wing to protect that  
25 wing.

26 If you see those log stringers --  
27 in order to get that kind of weight on that bridge,  
28 those stringers were brought in from Squamish  
29 on the coast, and they were so heavy that they were  
30





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(McKnight)

1 only permitted to haul two stringers on each  
2 truck.

3 A couple of things that  
4 came out of that: we reviewed their general  
5 bridge plans and asked for some changes. Normally  
6 those -- if I could just go back a couple of  
7 slides -- okay, those are eight by eights that  
8 go on top of the log stringers, and then normally  
9 what they do is just put running planks across.  
10 We asked that the entire bridge deck be enclosed  
11 to avoid material dropping through it into the creek.  
12 This is especially true if you are using scrapers  
13 on a job, because as they move along they tend to  
14 drop a lot of earth, and we wanted to make sure  
15 that that material was not going to fall directly  
16 into the creek.

17 In addition, these curb logs  
18 on the edge of the span are normally set up  
19 about one foot above the top of the deck, and we  
20 requested that they set those curb logs right  
21 down on the solid deck of the bridge, so that  
22 you could run a grader or a loader across the  
23 bridge and scrape that accumulation of earth  
24 off the surface of the bridge without it falling  
25 off into the creek.

27 An interesting thing in this  
28 photograph: they had to install what they call  
29 a needle beam under this bridge to increase its  
30 capacity, and the fellow with the chain saw there





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(McKnight)

1       is cutting off the end of the needle beam, and  
2       they have hooked a choker on to it and up to the  
3       back hoe, so that when he cut the end of the log  
4       off it did not fall down into the creek.   The  
5       bridge crew did really an excellent job.   They  
6       were good people to work with and we were very  
7       happy with them.  
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C-1  
BN/bn

1                   (McKnight)  
2

3                   Mountain Creek, which is one of  
4                   the largest creeks in the area that had to be crossed,  
5                   we were looking at a 120 foot clear span to get  
6                   across this creek, and it was just beyond comprehension  
7                   to build one of these temporary access bridges. So  
8                   the big problem here was that in order to get access  
9                   to both sides of the creek, they had to drive around  
10                  about eight or nine miles, I guess, from out of the  
11                  campground, around into Rogers and back along the  
12                  access road. So the procedure here was a little  
13                  bit different. Because we were using a steel span,  
14                  the abutments were constructed approximately halfway  
15                  up the finished height. This is the bridge steel  
16                  you see here. I think it came in from Vancouver,  
17                  if I remember correctly, and two about 50 ton cranes  
18                  had to be used just to unload that span off the  
19                  trucks.

20                  There it is unloaded, ready to  
21                  work on.

22                  That large blue tank you see there  
23                  was a water tank that they had on site for fire  
24                  fighting. They positioned it up on top of the bridge  
25                  span and filled it full of water, and the cat that you see  
26                  is a D-8, and it was hooked onto the back end of  
27                  the bridge span.

28                  The two cranes were driven around  
29                  to the Rogers end and set up, and after much planning  
30                  and deliberation, the D-8 cat started to push this





C-2

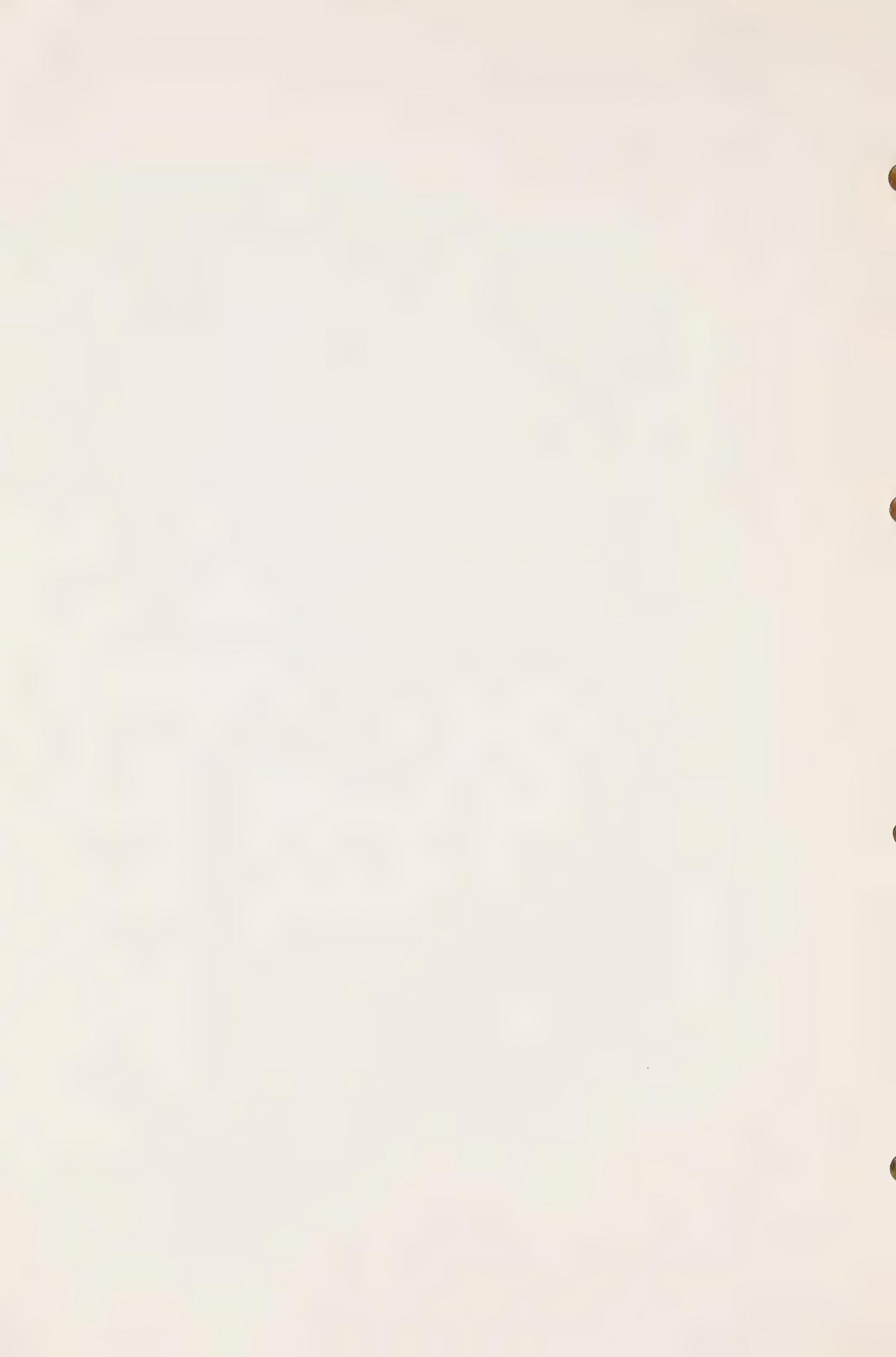
1                   (McKnight)

2                   bridge span out over the creek. The water tank, of  
3                   course, was being used as a counter-weight.

4                   Once the bridge span had got out  
5                   to the point where it was on the balance point, the  
6                   cranes were able to hook onto it and gradually start  
7                   taking the load off the span. So as the cat continued  
8                   to push, the cranes were gradually able to pick up  
9                   their end of the span and move it across, and the  
10                  span was gradually lifted into place.

11                  Access and timber removal on  
12                  the right-of-way became the next major problem. The  
13                  contractors that were preparing the access road  
14                  started work about the middle of July, around the 20th  
15                  of July, and the Stony Creek bridge, which provided  
16                  access to a large part of the right-of-way, was not  
17                  completed until September 1st, and we were getting into  
18                  such a problem in late August that CP came forward  
19                  with a proposal to utilize that old wooden bridge  
20                  into the Mountain Creek campground. We discussed it  
21                  with them, their engineering people had a look at  
22                  it, they put some reinforcing planking on the deck,  
23                  and we finally agreed that they would be able to  
24                  utilize that bridge for the removal of logs after our  
25                  public campground closed on September the 8th.

26                  We were involved in, once again,  
27                  some very steep terrain and we found very little  
28                  opportunity to build what you would consider the  
29                  conventional log landing, where you could store any





C-3

1                   (McKnight)

2                   sort of volume of logs. There was only a couple of  
3                   locations where we were able to construct log  
4                   landings that were relatively level and in those  
5                   locations, we were maintaining the right-of-way back  
6                   to the original 50 feet that had been recommended by  
7                   the panel. In addition, we held that 50 feet at all  
8                   the major creek crossings, or at least as close as  
9                   we could to it.

10                  THE CHAIRMAN: Maybe I should  
11                  mention at this point that we should have reached  
12                  the 20 minute mark and I think you may only be about  
13                  halfway through your slides. I am wondering whether  
14                  you could speed it up a little bit.

15                  MR. McKNIGHT: Sure, you bet,  
16                  Phil.

17                  Anyway, the big problem that was  
18                  faced was the timber on the right-of-way. As I said,  
19                  the contractors started early. They did not really  
20                  have any place to put the wood. A lot of the access  
21                  trail was so steep that it had to be built with  
22                  backhoes rather than cats, as is normal.

23                  So basically what we devised was  
24                  a scheme whereby we would maintain a narrow fringe  
25                  of trees on the bottom side of the right-of-way, and  
26                  the logs would be just pushed over the bank and decked  
27                  in large decks that were leaning up against the  
28                  standing timber that was left inside the right-of-way.

29                  We really developed a Catch 22

30





C-4

1

(McKnight)

2

situation where we were not able to remove the logs. We were not able to upgrade the road because the logs were in the road, and we certainly had problems with the contractor that worked for us, for Parks Canada in removing the logs. Seeing that the area is still part of the National Park, the logs remained the property of the Crown and were disposed of through Crown assets, so we had one contractor on one hand working for us to remove the logs, the other contractor was trying to build an access road. It basically did not work out.

13

14

This is a rubber tired hill boom that we eventually got in to remove some of the logs. This is a track mounted hill boom, and as you can see, the recovery of a lot of the timber was very difficult.

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General methods, once the road was built, the backhoes were pulling a lot of the debris back onto the road so it could be burned. Then the back slopes were cut back and the culverts installed.

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We made an attempt to salvage some topsoil. This occurred primarily at the east portal of the long tunnel. We had a large work area there in an old gravel pit where we could handle the material, and we also encountered some substantial depths of this topsoil material. It was basically loaded into trucks, hauled out to the old pit and





C-5

1                   (McKnight)

2                   dumped, and a large cat was there to separate the  
3                   stumps and roots, limbs and that from the topsoil  
4                   material.

5                   It was piled up and that pile of  
6                   stumps you see in burnables was set fire to this  
7                   fall. So we ended up with a substantial pile of  
8                   topsoil in this area.

9                   The west portal was basically a  
10                  standard construction procedure on a well defined  
11                  site. We had a few problems with the fact that  
12                  they were working on both sides of the Trans Canada  
13                  Highway, and the fellows got a little complacent  
14                  about wandering back and forth across the highway.  
15                  We had some traffic problems, but generally it went  
16                  well.

17                  An excavation, they poured a base  
18                  section, their reenforcing steel and then mobile or  
19                  portable forms for the tunnel box. We are starting  
20                  to backfill here. The highway is still in its  
21                  original location. There is the west end of the box  
22                  completed, looking into what will eventually be the  
23                  start of the tunnel. Here on the upper left, the  
24                  detour, and the excavation here is underneath the  
25                  highway surface or what was the highway surface.

26                  It started to get into the late  
27                  fall and still working away. At the east portal, the  
28                  major construction there was what they call a  
29                  reinforced earth retaining wall, a one concrete





-C-6

1                   (McKnight)

2                   retaining wall, and an H pile and timber lagging  
3                   retaining wall that will be eventually buried in the  
4                   final construction.

5                   The vent shaft location, as  
6                   discussed earlier, was quite a problem. Quite a number  
7                   of alternatives were looked at. All the alternatives  
8                   up until the final one, was investigated by  
9                   helicopter. We did not permit any access roads to  
10                  be built for the drill rigs. So the drill rigs were  
11                  all flown into the sites.

12                  They are flying into the final  
13                  site that we had investigated here, and as you can  
14                  see, I think that chopper was flying on about an  
15                  80 foot line, and you can just bearly see the machine  
16                  over the tops of the trees as they were lowering  
17                  the material in.

18                  In the late fall, CP came to us  
19                  and indicated that the site had been basically  
20                  successful, but they wanted to confirm the  
21                  geotechnical investigations and they needed to move  
22                  a larger rig in. So we did approve the  
23                  construction of an access road to the ventilation  
24                  shaft.

25                  Here the cats are piling and  
26                  burning and doing the earth work. Some of the little  
27                  things that happened.

28                  This was one of our first loads  
29                  of logs to come out over the new Stony Creek bridge.





C-7

1                   (McKnight)

2                   We were just doing fine. Whoops. I am a tremendous  
3                   photographer. I stood there with my camera strapped  
4                   around my neck and watched that truck roll over and  
5                   never took a picture until everything had come to  
6                   rest.

7                   A track mounted drill rig was  
8                   used to go outside the right-of-way at the Griffith  
9                   and the unnamed slide. We walked through the entire  
10                  area, picked out a very good trail, tried to make  
11                  every provision that the machine would be able to  
12                  make it through on a one trip basis. Unfortunately  
13                  it got stuck right to the whatever, and it turned  
14                  into a little more impact than we had originally  
15                  considered.

16                  Our poor bridge at Mountain  
17                  Creek campground suffered a bit of a rough fate.  
18                  They were hauling the machine out in the late fall  
19                  and the trailer slid off the edge of the deck plank  
20                  and that new deck planking that CP had generously put  
21                  on there and wiped out the railing. That has since  
22                  been replaced.

23                  These are certainly not major  
24                  problems, but it is the sort of thing that happens on  
25                  a day-to-day basis and it has to be looked into and  
26                  rectified.

27                  The access road in general has  
28                  stood up very well over the winter. We have had a  
29                  few minor problems. Here there is a slump, a failure





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C-8

1                   (McKnight)  
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in the middle of the road. It unfortunately or fortunately stopped before it got into the heavy timber at the edge of the right-of-way. It has managed to put quite a bit of pressure on the trees below and you can see some of them are starting to lean over severely. CP is presently having contractors come out to look at this to rectify this problem.

11                   A number of tension cracks

12                   developed in the road and luckily we have had a very  
13                   good spring, very little rainfall, and CP has been  
14                   able to get in there with their maintenance people  
15                   and basically fix these things up before we got any  
16                   amount of rain. We were concerned that we would have  
17                   major failures if it started to rain and the water  
18                   got into these tension cracks.

19                   We did have one unfortunate

20                   experience this spring in April. A piece of the  
21                   access road failed. It went down through the timber  
22                   and crossed the Trans Canada Highway, and unfortunately  
23                   there were two large semi-trailer trucks happened  
24                   along just at the time. One of them was pushed --  
25                   he got there just as the slide was coming down and  
26                   was pushed over the bank and ended up in the beaver  
27                   ponds at the bottom of the valley. The second one  
28                   was 5,000 gallons of wine and ended up laying on its  
29                   side in the middle of the Trans Canada Highway.

30                   Once again, CP's maintenance





1                   (McKnight)

2                   crews got in there as quickly as they could. There  
3                   is a backhoe working here, just trying to  
4                   re-establish the drainage. What we feel happened  
5                   was that a piece of the fill on the other side of  
6                   the culvert there let go, slid down into the bottom  
7                   of the gully, and probably what happened was the  
8                   culvert continued to work quite well, kept pumping  
9                   water into it, and this mass eventually got  
10                  saturated and took off to the highway.

11                  So, some erosion around some of  
12                  the major creeks. You can see where some of this  
13                  surface mud has flowed down and into the edge of the  
14                  creek.

15                  That is it. Sorry for the extra  
16                  time.

17                  THE CHAIRMAN: Thank you very  
18                  much for the presentation.

19                  Before we stop for coffee break,  
20                  I will just provide a quick opportunity for any  
21                  questions. Maybe what we can do is put the panel  
22                  on hold for a minute and ask                   first of all  
23                  whether anybody has any questions of CP Rail as a  
24                  result of their presentation. Alternatively, whether  
25                  anybody has any questions of Parks Canada from their  
26                  presentation.

27                  Panel, do you have any questions  
28                  you want to direct? George Tench.

29                  MR. TENCH: Mr. Fox, you





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1 mentioned the avalanche control at the west portal.  
2 Could you give us some details of that so that we may  
3 possibly get to the end of this and not have to come  
4 back to it.

5 MR. FOX: Well, sure, I will do  
6 as best I can, Mr. Tench. Do you want to know about  
7 avalanche control as in operating a railway, or do  
8 you want to know about avalanche control during  
9 construction? Now, there is a difference.  
10

11 MR. TENCH: Of the railroad.  
12 MR. FOX: Of the roadroad  
13 operating?  
14

15 MR. TENCH: Yes.  
16

17 MR. FOX: Okay. On the new  
18 line, when it is built, we will only traverse one  
19 slide area on the new second main line, and that is  
20 the slide area at Ross Peak. Our present railroad  
21 traverses that slide area and has done for the last  
22 100 years.  
23

24 Avalanches are controlled, and  
25 I must say exceptionally well, through Glacier  
26 National Park by means of mortar fire which is done  
27 by the Army in conjunction with Parks Canada. We  
28 are party to an agreement with those people such  
29 that they will shoot any avalanches that affect our  
rail line on a regular basis, in other words, as and  
when required, determined by the experts in Parks  
Canada.  
30

We propose to continue that





C-11

1 process, and I might say, that is also tied in to  
2 our train operations through our dispatcher in  
3 Revelstoke here, and when we are on that type of  
4 an alert, we always have our snow fighting equipment  
5 standing by to remove any slides or anything like  
6 that that may come down. When we are actually  
7 shooting, let us say Ross Peak slide, train traffic  
8 is stopped.

9 MR. TENCH: I understood that  
10 the dispatcher was maybe located right there on a  
11 sort of permanent basis. I could hardly visualize  
12 this.

13 MR. FOX: No, no. The train  
14 dispatcher is in Revelstoke.

15 MR. TENCH: So if there was a  
16 sudden slide, what technique have you got of stopping  
17 it?

18 MR. FOX: The technique is  
19 this. Fred Slice, who is the expert for Parks Canada  
20 in terms of when he is going to shoot these slides  
21 down, he immediately gets in contact with our  
22 dispatcher in Revelstoke, and he tells him what he  
23 is going to do and when he is going to do it, and  
24 then we stop our trains while he is in that process.

25 MR. TENCH: I am sorry to keep  
26 belabouring the point, but if you got one that was  
27 not anticipated ---

28 MR. FOX: One that came down and  
29 hit the track?





C-12

1 MR. TENCH: Yes.

2  
3 MR. FOX: Well, if we were  
4 unfortunate enough to have a train in there, it  
5 would probably hit it. If it came down, it will  
6 probably take out our communication line, and we  
7 know we have got a problem, and we can get people  
8 out there to see what that problem is.

9  
10 MR. TENCH: Thank you.

11 THE CHAIRMAN: Bill Ross.

12 DR. ROSS: I wonder, Bruce, if  
13 you would care to come up or at least I have some  
14 questions for you.

15 In your presentation, your point  
16 number 6, which deals with stability of disturbed  
17 slopes makes some reference to the off right-of-way  
18 drainage required to achieve the stability, and you  
19 indicate that Parks Canada will not permit elaborate  
20 impromptu drainage schemes. I wonder if you would  
21 elaborate on that point? I am not sure what you are  
22 getting at or what you mean. Do you have a particular  
example in mind?

23 DR. LEESON: Not specifically  
24 on this job. I can give you an example elsewhere  
25 associated with CP Rail and that is at Lake Louise,  
26 where we encountered a circumstance that for some  
27 reason was not anticipated and an elaborate drainage  
28 scheme off the right-of-way was required.

29 So what I am pointing out here  
30 is that we want sufficient research to be done so





C-13

1           that we know what we are getting into before a  
2           certain course of action is embarked upon because  
3           there may be a better alternative that would be chosen  
4           in the first place.

5                             DR. ROSS: Your point is that  
6                             you want the drainage schemes to be specified  
7                             beforehand and if they look sufficiently suspect  
8                             or objectionable to you, then you will inquire about  
9                             alternatives at that point?

10                          DR. LEESON: Yes.

11                          THE CHAIRMAN: Bill, are you  
12                          going on to a fresh one?

13                          DR. ROSS: Yes.

14                          THE CHAIRMAN: I wonder whether  
15                          CP Rail had anything that they might want to add on  
16                          that particular point at this time?

17                          MR. FOX: Well, certainly there  
18                          are three basic areas that we will have to cross on  
19                          Rogers Pass, surface route, which will require  
20                          additional drainage upslope, and they are the three  
21                          slide areas. There will be rather extensive  
22                          underground drainage required in those areas.

23                          Plans, we do have -- and  
24                          unfortunately there is not room here to put them  
25                          up, we do have posters on it which we can show you  
26                          when we get to Calgary. I will not say that is the  
27                          final design, but that is what it looks like right  
28                          now and we are still working our way through the  
29                          actual design, but in any event, Parks Canada will





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1                   certainly have an opportunity to look at those  
2                   before we proceed with them.

3                   DR. ROSS: And we will as well  
4                   in Calgary?

5                   MR. FOX: Well, you will not  
6                   see the final design, Dr. Ross, but you will see  
7                   what we propose at this time.

8                   The consultants really have not  
9                   finished all their work in this vein yet.

10                  DR. ROSS: Thank you. Dr.  
11                  Leeson, your point 10 about air quality makes  
12                  reference to advice provided by the Atmospheric  
13                  Environment Service regarding an air quality  
14                  monitoring program. Do you have any more details on  
15                  that? I do not think I have seen any documentation  
16                  dealing with that recommendation.

17                  DR. LEESON: That is a  
18                  recommendation that was produced by the West Coast  
19                  Environmental Task Force, and this is a group of  
20                  in-service Department of Environment scientists who  
21                  advise Parks Canada regarding the adequacy of all of  
22                  the environmental documents produced by CP Rail's  
23                  consultants. With respect to air quality, they have  
24                  advised us that they think a responsible way to  
25                  proceed would be to establish a monitoring system at  
26                  this time, before any changes take place so that we  
27                  would know the pre-construction status quo.

28                  That monitoring would continue  
29                  after the vent stack starts to operate, and if it





C-15

1 showed that there was a deterioration of air  
2 quality beyond some agreed specified level, then we  
3 would ask for some amelioration of that to be  
4 implemented at that time.

5 Now, this specified level is  
6 something that we do not at this point have numbers  
7 to put forward, and Atmospheric Environment Service  
8 pointed that out. They said there are no guidelines  
9 for air quality management in wilderness areas in  
10 Canada.

11 DR. ROSS: But what would be  
12 involved in the monitoring program? Would that  
13 involve primarily monitoring NO<sub>X</sub>, which I think was  
14 the major pollutant of concern, at least at the  
15 last hearings. What other aspects of air quality  
16 would be involved in this monitoring program?

17 DR. LEESON: Mr. Faulkner, who  
18 is the gentleman who has responded, was not specific  
19 about that. I can give you a copy of his letter.  
20 He simply says he recommends that we do air quality  
21 monitoring in order to establish the status quo  
22 and determine to what extent it changes, and also  
23 that we ought to establish some standards that  
24 we are working towards.

25 DR. ROSS: I wonder, Mr. Fox,  
26 if you would care to comment on this matter,  
27 especially with respect to the potential for  
28 ameliorating any impacts which would be observed in  
29 such a monitoring program? I wonder if you or





C-16

1 perhaps one of your consultants would care to  
2 comment on that?

3 MR. FOX: Perhaps I can get  
4 a clarification first. Where would they want us to  
5 monitor what?

6 DR. LEESON: Where would be in  
7 the vicinity of the Banff stack and perhaps a couple  
8 of other selected places. Mr. Faulkner pointed out  
9 that electric power was required to operate monitoring  
10 machinery.

11 So perhaps at our compound area  
12 and somewhere near the vent stack.

13 MR. FOX: This is after the vent  
14 shaft has been built and in service or immediately  
15 before and after? Is this what you are referring  
16 to?  
17

18 DR. LEESON: Both before and  
19 after, Mr. Fox.

20 MR. FOX: How long before would  
21 you want to monitor this?

22 DR. LEESON: If the machinery  
23 always had to have electric power, it could not be  
24 started until your power actually gets there.

25 MR. FOX: Well, the power is  
26 going to be there up in that shaft I would guess about  
27 1987, 1988.

28 DR. LEESON: If this machinery  
29 that Mr. Faulkner is referring to cannot operate  
30 without electric power, well then it could not be





1 started before then

What he has suggested is that  
we establish the circumstance as it exists before  
the vent stack starts to operate so that we can  
continue to operate ---

7 MR. FOX: You have got a  
reference point.

DR. LEESON: Yes, and we  
9 continue monitoring after it starts to operate and  
10 see if there is any change that is of any special  
11 concern.

13 MR. FOX: Well, I do not see  
14 anything wrong with that, Dr. Leeson, but, you know,  
15 it is something that we will not be able to do and  
16 give you any results on until sometime late 1987-1988,  
17 as I see it in terms of power to be available up that  
shaft.

19 DR. LEESON: Yes, I did this  
20 kind of monitoring at Lake Louise, and we had to have  
21 electric power there to do it. It could not be done  
remotely.

THE CHAIRMAN: I am sorry, do  
you know if we are talking about in-stack monitoring  
or you are monitoring at some certain distance away  
from this particular installation, therefore, your  
monitoring points would have to have hydro power and  
they may be at some distance.

29 DR. LEESON: Mr. Faulkner points  
30 out that his idea might not be acceptable to Parks





C-18

1 Canada because you would have to have power lines  
2 and rights-of-ways to get to these monitoring sites.  
3 So the whole thing is very conceptual at this point  
4 and we would have to discuss it with him to see  
5 just what it is he has got in mind.

6 MR. FOX: Yes, we could put  
7 something down at your Parks complex there and run  
8 whatever it is to be run down there, and so far as  
9 the vent shaft, really, all that would be required  
10 of the vent shaft, I guess, after you get power there,  
11 is to run a series of emission tests at that location.  
12 Perhaps you could start before we start running the  
13 diesels through there so you get some sort of a  
14 benchmark there. At the same time you could continue  
15 to monitor them down at say your Parks complex, and  
16 in between I do not know what the hell you would do.  
17

18 DR. LEESON: I do not know either.  
19

20 MR. FOX: Unless we get a  
21 bicycle up there and we put Dr. Leeson on it and let  
22 him pump it or something.  
23

24 THE CHAIRMAN: Just one small  
25 little detail. Is Parks proposing that CP pay for  
26 this?  
27

28 DR. LEESON: Yes.  
29

30 THE CHAIRMAN: CP, you might have  
some comment at this point.  
31

32 MR. FOX: Well, I would reserve  
33 comment on that, Mr. Chairman, until I know precisely  
34 what is involved. I do not think it would be fair  
35





C-19

1           on Dr. Leeson's part to say that we should  
2           be expected to take up the cost either at this stage  
3           until we know really what is required there and what  
4           is involved.

5                         If we can find that out, I think  
6           maybe we can give you a decision.

7                         THE CHAIRMAN: Are there any  
8           questions from members of the audience at this time?  
9           I know we have one from a panel member. George  
10           Tench.

11                        MR. TENCH: Dr. Leeson, in your  
12           June 6 letter, point 3 you request consideration of  
13           technical assistance, I think, just to sort of put  
14           the thing in a nutshell. Have you done any thinking  
15           about this yourselves and have you got any suggestions  
16           as to what sort of help you would need, and when you  
17           would need it, bearing in mind the timetable that is  
18           in front of us now for getting this work ready for  
19           tender call?

20                        DR. LEESON: This is with respect  
21           to terrain disturbance?

22                        MR. TENCH: Yes.

23                        DR. LEESON: Well, I think if  
24           Mr. Herwood's request to provide  
25           specific information regarding alternatives  
26           considered to reduce the right-of-way width requirement  
27           at location of major cuts and fills is responded to and if  
28           the panel considers that CP Rail is convincing with  
29           respect to they have done everything they can, then





C-20

1 we will be satisfied.

2 MR. TENCH: Looking at this  
3 thing in a wider scale and looking at your own  
4 input of the design, do you feel that you would  
5 need assistance of a technical variety to help you?

6 DR. LEESON: Yes. Perhaps I am  
7 not explaining myself very well here.

8 I am proposing that the panel  
9 arrange for this to be done to their satisfaction,  
10 that if Mr. Herwood's request for information is  
11 responded to and the panel is satisfied that nothing  
12 more can be done than what is being proposed, then  
13 we also would be satisfied. We would not propose  
14 to have a parallel investigation going on.

15 MR. TENCH: What I see, though,  
16 is your continuing involvement in the Design  
17 Committee, for example, where if you had at your right  
18 arm some technical person who could sort of explain  
19 things and interpret things for you that a lot of the  
20 day-to-day decisions could be taken without coming  
21 back to the panel, for example.

22 DR. LEESON: Yes, now I understand  
23 what you are talking about, and we are going to  
24 request that we do have technical assistance available  
25 to us on an ongoing basis after the panel work is all  
26 finished, because there are many things that we are  
27 asked to evaluate and advise about that we simply are  
28 unable to deal with.

29 MR. TENCH: Are you in a position  
30





C-21

1 say by the end of the week to give us an indication  
2 of what sort of help you would need and how long you  
3 would need it?

4 DR. LEESON: We know the  
5 subjects that we want help with. The intensity of  
6 it and longevity of it I guess will simply be  
7 related to when the detailed designs are provided to  
8 us and decided upon, so probably a period of a couple  
9 of years.

10 THE CHAIRMAN: If I could follow  
11 up on this. The question of detailed designs, I  
12 think I saw somewhere that CP Rail is quite anxious  
13 to proceed to a tender and I think September was  
14 the sort of dates I remember seeing. If you are  
15 talking about going to tender in September, if you  
16 are going to have those detailed designs and what  
17 you have got now must be pretty darn close to being  
18 detailed design work on the right-of-way?

19 MR. FOX: That is correct. Our  
20 detailed design is pretty well finished as far as  
21 the right-of-way is concerned.

22 THE CHAIRMAN: So if we are  
23 talking about alternatives, those alternatives are  
24 going to have to be thrashed out during these set  
25 of meetings that we are going through right now,  
26 specifically, we have this on the agenda for our  
27 sessions in Calgary.

28  
29 MR. FOX: That is correct.

30 THE CHAIRMAN: Bill Ross.





C-22

1 DR. ROSS: Moving along to  
2 point 11, you make reference there to the removal  
3 of timber resources compared to 1982. I am not  
4 sure I understand the reason why you hope that the  
5 removal of timber will proceed more efficiently.  
6 Were there some problems in 1982 and were they  
7 important enough that we ought to be dealing with  
8 them?

9 DR. LEESON: There were problems  
10 and they were difficulties of a very serious, day-  
11 to-day nature, and Mr. McKnight, that is what he was  
12 talking about when he said that the guy who was  
13 supposed to remove the timber said he could not do  
14 it until the road was improved and the guy who was  
15 supposed to improve the road said he could not do it  
16 until the timber was out of the way. So every day  
17 we thrashed around with all this and finally ended  
18 up only getting about half the timber removed and  
19 being in everybody's way all summer. That procedure  
20 just did not work out.

21 Mr. McKnight did not get a chance,  
22 because he ran out of time, in his presentation, but  
23 it is in his writeup where he describes the new  
24 arrangement with CP Rail is that we are going to sell  
25 them the timber, the Crown will receive its money for  
26 all the timber on the basis of an independent  
27 appraisal, then CP Rail can do with it whatever they  
28 want.

29 DR. ROSS: That is suitable to  
30





C-23

1 you and you think that will overcome these  
2 difficulties?

3 DR. LEESON: Yes, that way it  
4 is a turnkey operation.

5 DR. ROSS: Mr. Fox?

6 MR. FOX: Well, I am sick and  
7 tired of hearing about the blasted timber. Really,  
8 it is costing me one whale of a pile of additional  
9 money because I had to work around all these piles,  
10 and Parks Canada deal was, to fill you in on the  
11 whole thing, we would cut and deck the timber along  
12 the tote road, and the deal was that Parks Canada  
13 would make their arrangements to take the timber off  
14 the right-of-way and sell it to whoever they wanted  
15 to sell it to and pocket the money.

16 Unfortunately the man they dealt  
17 with was, I will say questionable in his intent to  
18 do what he claimed he could do, and the result was  
19 very little timber was taken off the right-of-way, and  
20 what he did take he selected out of piles and strewed  
21 piles around and we had to come in and do a lot of  
22 additional work and our grading contractor had a  
23 lot of additional difficulties in working around  
24 these piles, which cost us extra money.

25 Now, in future, so far as I am  
26 concerned the timber up there is worth one thing, and  
27 that is put it in a pile and burn the damn stuff  
28 because it is not worthwhile taking out and selling  
29 it. So as far as I am concerned I am prepared to

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C-24

1 pay what we pay the Crown in the Province of  
2 British Columbia and stumpage costs and we will  
3 burn the stuff, and that is all the timber is worth  
4 there.

5 It is just a real headache for  
6 anybody to try to play around with that blasted  
7 timber. It is not worth it, not worth it at all.

8 THE CHAIRMAN: At this point  
9 maybe we could take a short coffee break, coffee is  
10 ready, and reconvene in ten minutes, and Mr.  
11 McCrory, I believe, wants to make a presentation.

12 If there is anybody else who  
13 wants to make a presentation, perhaps you could let  
14 myself or the panel secretariat know during the  
15 break. Thank you.

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1 ---UPON RECOMMENCING AT 9:00 P.M.

MR. WAYNE McCROBY:

Ladies and gentlemen, Members  
of the Panel, and C.P. Rail:

My name is Wayne McCrory, and I am from New Denver, B.C. I am a wildlife consultant and a Director of the Valhalla Wilderness Society. As I was raised in the Selkirks to the south of here and worked two years on mountain goat studies in Glacier Park, I have come to treasure it along with thousands of other Canadians as one of our monuments of wilderness and natural beauty preserved for all generations. It is out of my own personal appreciation of our grand Glacier Park that I have come again before you to express my concerns regarding the huge construction project by C. P. Rail.

I would first like to commend Mr. Fox, C.P. Rail and their consultants for having done their environmental homework over the past year. The list of documents on visual impact, caribou, bears, noise pollution and other concerns is impressive and most of the work appears well done. I do regret the rush nature of the work which gives us all so little time to digest and analyse the impacts. Then, receiving C.P. Rail's Environmental Impact Report only four days before this hearing, does not exactly give one much time to prepare one's case.





From an overall prospective  
I do not oppose the necessity to expand the rail  
system through our western mountains. However,  
I do believe that where we violate the sanctity  
of our national parks to achieve this, that there  
should be some compensation to replace land areas  
lost and impacted. I also believe that we should  
not cut any costs to achieve as little environmental  
impact as possible, and that such cost should not  
be borne by Canada but by the consuming nations,  
such as Japan, whose requirement of our raw  
resources necessitates an expanded transportation  
system. I believe these two principals, the one  
of adequate compensation for the park areas lost  
and the one of not cutting any cost to mitigate  
environmental damage, must be inherent in this  
megaproject.

I state these principals now  
but will refer to them more specifically later. Also  
from an overall prospective it is regrettable  
that a thorough economic, social and environmental  
assessment was not made to compare the Rogers Pass  
twinning project with the rehabilitation of the  
Kettle Valley Line to the south. If this had  
been done, we would have had at least a chance  
to consider an alternative route where the serious  
negative impacts on our western mountain parks  
might have been avoided.





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(McCrory)

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I have endeavoured to review  
the massive volume of technical reports on the  
Rogers Pass project in the short time they have  
been made available to the public. I was  
impressed with the responsible manner in which  
some of the environmental concerns have been  
incorporated into the design and planning features  
at some cost to C.P. Rail.

After reviewing the stack  
of impact reports and their praiseworthy mitigation  
promises, I was very struck by the accumulative  
negative impacts that the C.P. Rail project will  
have upon Glacier Park. For, even with  
mitigation, we will still have 500-foot high scars  
from large railroad cuts, increased mortality to  
park wildlife, pollution and rechannelling of  
streams, possible landslides, large vent stacks,  
spewing plumes of exhaust and noise, disturbances  
to grizzlies and other wildlife and other impacts.  
To add to this, the park will be turned upside  
down as an army of men and machines hack away at the  
mountains. At every quarter of the park corridor  
there will be construction. For four years the  
park corridor will feel more like a construction  
area than a national park, and forever after, with  
the new impacts, will feel less like a preserved  
national heritage and wilderness area.

I believe that the Park will  
suffer more severe losses than C.P. Rail would have





PM-3-D

(McCrary)

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us believe, and I thus hope that as much mitigation  
2 as possible can be achieved to help soften this  
3 blow.

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Now I would like to express  
some more specific comments and questions:

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1) Last year I raised the question as to whether there would be some form of compensation to the national park system for land areas lost and disturbed by the C.P. Rail project. I ask again: will there be any compensation, or will C.P. Rail obtain these park lands for free?

2) Regarding the vent buildings I am glad to see that they will be largely screened from the highway. However, what is not addressed is that the mountain slopes above are used by hikers and wildlife and that these will be affected by the visual disturbances as well as the smells and noises. In other words, the recreational value of the slopes and trails will be reduced by this industrial vent complex. As well, I have noticed smoke plumes at the east portal and I would like to ask whether or not there will be smoke plumes visible above the vent stacks?

3) Regarding the two construction camps, I support Parks Canada's position that these be located outside Glacier Park. One of the reasons C.P. Rail gives for wishing to locate these large camps within the Park





-4-D

(McCrary)

1                   is that there will be high costs for the extra  
2                   time to drive the men to and from work. Yet the  
3                   extra time is roughly equivalent to the two  
4                   coffee breaks per day that the company will pay  
5                   for.

6                   In addition, I would like to  
7                   ask the Panel to independently review the so-called  
8                   additional costs. For example: at the west end,  
9                   the out-of-park alternative at Illecillewaet is  
10                  only six miles from the park alternative at Flat  
11                  Creek. Yet C.P. Rail claims it will take 17  
12                  minutes to drive this extra six miles, which means  
13                  a speed of 21 miles per hour. It would seem  
14                  that if C.P. Rail would let its crew buses travel  
15                  at 42 miles per hour, any extra cost due to the  
16                  distance travelled, would be eliminated.

17                  I also believe that the camp  
18                  should be located outside the Park so that the  
19                  social infringements upon the legitimate park  
20                  users are minimized. These work camps - one for  
21                  420 men and the other for 460 men, are actually  
22                  small town sites or the equivalent of large Hilton  
23                  Hotels. C.P. Rail wishes to convince us that  
24                  they can manage such a large population of workers  
25                  in the Park so as not to infringe on the public  
26                  using the Park. I do not think it is realistic  
27                  for C.P. Rail to claim to restrict the activities  
28                  of this work force so as not to interfere with  
29                  Park users. From my experience in construction





(McCrory)

camps, the men work hard and play hard, and I do not see how it is humanly possible to prevent such things as beer parties in nearby campgrounds or other infringements by construction crews on litigate Park users.

Reasonable alternatives do exist for the camps just outside the Park and I think the concerns of the Park should come first and not second, and that the camps should be located outside of the Park.

4) My next concern has to do with the construction camps and bears. The well documented consultants report on bears and caribou stated that:

"It is almost a certainty that problems could arise at both camps which could lead to human injury or death and removal of one or more bears."

The consultant recommended a bear-proof fence around the entire camp as part of a multiple defence system against bears, as both camps in the Park will be located in black bear and grizzly habitats. Yet C.P. Rail has decided against such a fence claiming that they will only fence off the garbage, loading dock and storage areas. They also claim that the cost of the large fence is not warranted:

"given that no other facilities in the park are fenced".





PM-6-D

(McCrory)

As to this reasoning, I cannot understand why they should feel they should be given the same treatment as are the natural park campgrounds and other facilities managed for the public in the Park. After all, their camps will have nearly 900 men, hardly comparable to the smaller numbers who use the campgrounds and other facilities.

I would like to ask C.P. Rail if their option for partial fencing will be as safe from a bear-human point of view as a fully fenced camp. Have they considered the implications of leaving the camp open to bears that will be drawn to the inevitable food and odours that will be there no matter what the policing? Have they considered the implications of a grizzly with cubs wandering in and going on a rampage after being shocked by the electric fence at the food storage area? Have they considered that they will not be able to control all of the 900 men in the confinement of the camps and there will inevitably be those wandering in or near the camps where they could have an encounter with a bear? These are only some of my concerns. I hope they will be addressed.

In addition, I am concerned that C.P. Rail did not review bear habitats at the alternative camp areas outside the park or the other alternative at Glacier in the Park. I believe





(McCrory)

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the two sites in the Park are located in poor  
quality bear habitats where bear problems are  
less likely to incur. However, if camps are  
located outside the Park, the same bear-proofing  
and camp management should be applied to minimize  
man-bear conflicts and maximize human safety.

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5) Now to my last point:

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As I have stated the impact studies and mitigation  
plans by C. P. Rail are generally impressive  
and worthy of commendation. However, the  
question that needs to be asked is what kind of  
corporate citizen has C. P. Rail has been in our  
mountain national parks? Can we rely on their  
claims to:

"respect the natural integrity  
of Glacier National Park",

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and their claims to a:

"commitment of environmental  
protection".

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A review of their environmental  
track record in the mountain national parks over  
the last decade leaves me with a very uneasy feeling  
as to C.P. Rail's claimed responsibility towards  
the environment of our national parks. Within  
the parks numerous charges and some convictions  
have been brought against C.P. Rail and its  
associate, Canadian Pacific Hotels. Offences  
include destruction of revegetated areas, blatant  
garbage mismanagement and pollution park waters.





1 | (McCrory)

The park files have numerous such complaints and some convictions against Canadian Pacific which indicate not isolated accidents and incidental carelessness towards the environment, but rather a blatant and irresponsible attitude. Let me cite a few examples. Example A: C.P. Rail's twinning in Banff and Yoho Parks in 1981. Huge scars were left along the new railroad above the highway. These scars are a national disgrace. In addition, Yoho Park wardens documented a 50-man C.P. Rail crew from the twinning project dumping human waste, kitchen waste and creosoted rail ties into Summit Lake. Garbage was thrown into the woods and caused grizzly and black bear problems. One C.P. employee was convicted but Parks Canada refused to lay further charges.

Example C: In 1982 a C.P. Rail employee was convicted in Yoho Park of driving over and damaging a park area that had been





PM-9-D

1                   (McCrory)

2                   revegetated. This was after C.P. Rail had been  
3                   warned about the matter.

4                   These are only a few examples  
5                   of C. P. Rail's lack of environmental responsibility  
6                   in the past in our National parks. They do raise  
7                   legitimate concerns as to whether C. P. Rail is  
8                   capable of guaranteeing good environmental  
9                   performance on the Rogers Pass project.

10                  In light of this, I would like  
11                  to recommend to the Panel that C. P. Rail be  
12                  required to post a performance bond for the Rogers  
13                  Pass project. Secondly, I would like to recommend  
14                  to the Panel that the Project Environmental Committee,  
15                  currently comprised of only Parks Canada and C.P.  
16                  Rail, be expanded to include some members from the  
17                  environmentally concerned public.

18                  In closing, it is my sincere  
19                  hope that the Rogers Pass project will see a turning  
20                  point in C. P. Rail's environmental responsibility,  
21                  and that all of the impacts to our beautiful  
22                  Glacier Park will be minimized as much as possible.  
23                  Thank you.

24                  THE CHAIRMAN: Thank you for  
25                  the presentation. Perhaps you might want to stay  
26                  around there just in case there is any questions  
27                  that come to you, because I will be asking the  
28                  Panel and C.P. and others if they have any points.

29                  Before we start that though I  
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believe you have asked a question about compensation  
and I will try to provide you with an answer on that.  
I do not think I should go into it too deeply except  
to say I understood that there are negotiations  
on compensation between the C.P. and Parks, but  
maybe Parks you could elaborate a little bit,  
somebody from Parks on the question of compensation.  
I understand there are negotiations involved.

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Correct me if I'm wrong. ---

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Okay, just for the record,  
the reply was from Mr. Gallagher -- if you could  
use the microphone in the future -- the reply was,  
yes, there are negotiations going on but he is not  
ready to give a definitive answer on that.

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MR. FOX:

Mr. Chairman, I believe that  
subject was brought up -- I cannot recall at which  
particular stage of the hearing last year, and it  
is in the proceedings of the Panel hearing what was  
said at that time and if I am not mistaken, Mr.  
McCrory, we were going to trade something like  
let us say Lake Louise and Glacier National Park,  
which would probably be of the order let us say  
500 acres round figures for some 6,000 acres in  
Cascade Valley. That sounds like a pretty good  
deal to me.

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MR. McCRORY: That is not a  
bad deal, Mr. Fox. Do you know how far along the









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2 by those work camps even though they are not in the  
3 Park, and I wonder if you can convince me why the  
4 impact on Park resources will be much less?

5 MR. McCRARY: As I stated, Dr.  
6 Ross, I have reason to believe, but I do not have  
7 the documentation to back it up -- it is just my  
8 own observation from working with grizzly bears  
9 and bear habitat, and my familiarity with the  
10 areas mentioned in Glacier Park, that the alternatives  
11 for camps outside the Park are in lower quantity  
12 bear habitat, and, therefore, there will be fewer  
13 bear problems for one thing. I think the fact  
14 that camps will be closer to Revelstoke and Golden  
15 will mean that workers will probably be more  
16 inclined to go there to recreate or down to Elber  
17 Canyon to the hot springs than to go into the Park.

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DR. ROSS: That makes the  
assumption that the work camps will be designed  
to the same quality, in terms of protection against  
bear problems, and makes the assumption that the  
workers will have their own transportation from the  
camps, which, I believe, is not the case if they  
are to be within the Park. That is correct, is it,  
Mr. Fox?

MR. FOX: We do not propose to  
allow any private automobile parking at any of the  
camps within the confines of the Glacier National  
Park.









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2 some of the problems which we might expect.

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4 is: are you a Parks employee?

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6 consultant.

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8 MR. FOX: Then how would  
9 you have access to Parks' records?

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11 MR. McCRORY: How would I have  
12 access to Park records?

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MR. FOX: Yes.

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15 MR. McCRORY: I guess for the  
16 same reason that C. P. Rail might have access to  
17 Park information.

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19 MR. FOX: Well, we do not  
20 have access to Parks' records, I can assure you.

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MR. McCRORY: Oh yeah!

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23 MR. FOX: None whatsoever. If  
24 we want anything we have to go through the proper  
25 channels to get it. So you know what you are  
26 saying here about what has happened at various  
27 other places, and I presume you were not there --

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29 MR. McCRORY: Those incidents  
30 are common knowledge.

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32 MR. FOX: You were not there  
33 when they happened, I take it?

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35 MR. McCRORY: No, I was not  
36 there when they happened but I worked two years  
37 in Yoho Park.





PM-15-D

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2 MR. FOX: So this is really  
3 hearsay on your part?

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5 MR. McCRRORY: I do not think  
6 it is hearsay. I think the evidence is there.  
7 They are public knowledge and they have been  
8 documented by Parks Canada and the information has  
9 been made public.

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11 MR. FOX: In what respect  
12 and how?

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14 MR. McCRRORY: It has been  
15 made public through the media. The Lake Louise  
16 incident was publicized in the newspapers and the  
17 incident at Summit Lake and the Wilderness Groups  
18 ended up laying charges themselves.

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20 MR. FOX: And what happened  
21 to the charges, Mr. McCrrory?

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23 MR. McCRRORY: The charges were  
24 not pursued by the crown prosecutor.

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26 MR. FOX : I believe they were  
27 dismissed were they not?

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29 MR. McCRRORY: Yes, but the  
30 evidence was never brought to trial, Mr. Fox,  
so that it could be reviewed and judged upon. The  
evidence is there.

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32 MR. FOX: It was dismissed  
33 for lack of evidence, I believe, was the correct  
34 terminology.

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36 MR. McCRRORY: Well, to my

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knowledge the infractions were well documented.

There is photo documentation of what happened there.

I do not think it is something we need to get into.

THE CHAIRMAN: Perhaps I could just discuss the issue of this particular project; I would rather like to know from Parks whether there have been any problems during this current phase of construction that has taken place, because that was an issue during the last set of meetings, and I think that some of these concerns which Mr. McCrory is bringing up were issues at the last set of meetings. Have you had problems with workers? Have you run into the sort of problems in terms of the way C.P. is doing the work? I did not hear anything during your presentation, Mr. McKnight; maybe you can let us know now whether given the present system, you are experiencing problems; whether you are looking for some improvements, and I guess also in terms of the Committee structure, the question that has been raised here: are you finding that with that Committee structure you are able to deal with the various problems that are coming up?

MR. MCKNIGHT: Those are a lot of questions all rolled up into one.

On the social end of it, I do not feel we experienced any major problems. We did not have a work camp in the Park this year. The majority of the workers stayed outside the Park.





1                   The contractors chose for their own reasons not  
2                   to establish the Beaver Camp, and so it is very  
3                   difficult to comment on that, because we just  
4                   did not have a large work force in the Park.  
5

6                   I understand that the hotel  
7                   in the summit of Rogers Pass was utilized almost  
8                   to its capacity — whatever was available for  
9                   construction workers, and I am not aware of any  
10                  major social problems from that.

11                  Next?

12                  THE CHAIRMAN: Has the  
13                  Committee structure -- that was a little bit of  
14                  a deviation I will admit, whether you found --  
15                  there was a comment in here, including some  
16                  members of the environmentally concerned public  
17                  on the Environmental Committee, and I was looking  
18                  to users and the opportunity to raise the question of  
19                  whether you felt the Committee was really being  
20                  able to handle the problems as it is publicly or  
21                  presently constituted?

22                  MR. McKNIGHT: I think that  
23                  any additions to the Committee would certainly  
24                  be welcomed. One of the things I was quite  
25                  surprised about, I felt that one of my major duties  
26                  would be to talk to people that were concerned  
27                  about the project -- site visits or whatever, and  
28                  I found I was not approached over the entire  
29                  summer, other than Parks Canada staff and people  
30                  like that.





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Yes, I think it would be valuable to have somebody from the outside. I feel sometimes Parks Canada tends -- we get a little too close to it and we do not see all the issues, and I would personally welcome any input into the Committee.

THE CHAIRMAN: Okay, thank you very much.

DR. ROSS: Could I follow that up for a moment, Mike? One of the roles of the Committee was to ensure the provision of information to the public, and I wonder if either through, or perhaps through Mr. Fox or Doctor Leeson, what sort of information was provided to the public? What tools were used? Let me stop at that -- what information was provided to the public, because it seems to me that that is the sort of thing that you would expect -- you would expect to get responses from the public if you provide them with information about what is happening, and I do not know what the Committee was doing along those lines. I think that it may be linked to Mr. McCrory's suggestion because I would guess that one of the reasons for adding an environmental group member to the Committee would be to allow the interested public, the environmental groups in particular, to see what was happening within that as well as making suggestions to it. I assume that was part of the rationale.





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2 MR. McKNIGHT: Mr. Gallagher,  
3 would you like to speak to that seeing you are  
4 Chairman of the Environmental Committee.

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MR. GALLAGHER: We have had some contact with the public. My contact has been mostly by correspondence though, through the National Parks and the National Provincial Parks Association, Miss Tara Grant, and her concerns were the matters of construction used to start the project and I am sure that Mr. Paradine is totally familiar with that correspondence, because he did get copies of all of it.

DR. ROSS:

Let me pursue that just a little bit more. I promise to get back to Mr. McCrory and not let him get away, but while we are on this subject, one of the things that one might have expected in terms of an Environmental Committee would be a year later to observe what had happened and evaluated it, especially with respect to the environmental mitigation measures that were used during the year, perhaps to provide an annual report on the mitigation measures used and to make this information available to the public. I would have thought that might be something that would have been undertaken and I do not know anything about that. That certainly would have been helpful. Have you done anything along those lines?





1 MR. GALLAGHER: No. The  
2 only thing we have done though is we have a record  
3 of all meetings and that could quite easily be  
4 put together for the public.

5 THE CHAIRMAN: Okay, do you  
6 want to get back to Mr. McCrory on something?

7 MR. ROSS: Yes, I do. One  
8 of his queries to C.P., I would like to ask Mr.  
9 McCrory, has something to do with C.P. Rail's  
10 option for partial fencing will be as safe as a fully  
11 fenced area in your view. You provide some  
12 indications here that you suspect it may not be.  
13 Do you have any particular evidence or something  
14 to back up your suspicions for why these problems  
15 will be the important ones or something to convince  
16 me more that the partial fenced option is less  
17 satisfactory than it should be?





1 possible to control their roaming about or to  
2 control lunch bags being thrown out the window  
3 or food around. I just do not believe it is  
4 humanly possible to achieve the control that C.P.  
5 Rail would like to have us believe, and so it is  
6 my opinion -- I guess it would be that the kind  
7 of option that C.P. Rail has chosen would be  
8 less safer than the more secure system with the  
9 camp entirely fenced off, but that is only my  
10 opinion.

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1 DR. ROSS: Thank you. I  
2 indicated I will get back to CP on this matter.

3 One thing which I would like,  
4 Mr. Fox, at some point, perhaps by Friday when we  
5 get to Calgary is an indication on the maps of the  
6 work camps where the fencing would actually go  
7 because that is not quite clear to me and I do not  
8 see it on those maps on the wall.

9 MR. FOX: There has been no  
10 attempt to show the fencing on any of those diagrams  
11 that you see, but they would have to be around the  
12 perimeter road if you are going to fence the entire  
13 complex.

14 DR. ROSS: No, but I am  
15 interested in the two alternatives of either fencing  
16 the entire complex, which I believe was in the  
17 consultants' report, and the alternative which I  
18 believe you put in this red document which I believe  
19 is presenting a smaller component of it.

20 MR. FOX: We can do that for  
21 you, Dr. Ross.

22 DR. ROSS: Thank you.

23 THE CHAIRMAN: I believe you had  
24 a question you wanted to ask, Mr. Fox.

25 MR. FOX: It is not a question.  
26 It was a remark. I believe it was Dr. Ross brought  
27 up or perhaps you, Mr. Chairman, brought up about --  
28 it was Mr. Chairman, brought up about problems that  
29 we had with the workers this year in the park.





E-2

1                   I would like to say this that  
2                   with the small amount of work and the small work  
3                   force that was underway, as Mr. McKnight indicated,  
4                   the contractor chose not to put a camp up and  
5                   of course this job was really of a rather short  
6                   duration. Rather, he opted to use local people where  
7                   he could get them, and I believe some of them drove  
8                   Golden and also Revelstoke, but nevertheless, there  
9                   were some 40 of them put up at the Glacier Park  
10                  Lodge I believe it is called.

11                  I made some inquiries, not to  
12                  the hotel, but to the superintendent of the job and  
13                  asked him very bluntly did you have problems or did  
14                  the men cause problems in that environment. As you  
15                  will recall in Vancouver last year and also in  
16                  Revelstoke we had some rather disturbing things  
17                  said about what could happen and what did happen in  
18                  that establishment. Anyway, I have been assured  
19                  that there were no untoward instances that took place  
20                  whatsoever during the period that these people were  
21                  up in this hotel and I guess they were there for ---

22                  MR. SOUL: Bull face lies.

23                  MR. FOX: I am sorry?

24                  MR. SOUL: Bull face lies.

25                  THE CHAIRMAN: If you are going  
26                  to become involved in the discussion, could you  
27                  indicate, please, and then we can get you down on the  
28                  record, because otherwise it is not going to become  
29                  part of the record.

(

(

(







E-4

I would be more than happy to do that, and with the camp that is going in you say that there is going to be buses bringing the people in and there will be no cars allowed. That means that Greyhound would probably be an alternate route to leave that camp if somebody so chose to do so, which means that the hotel is a bus depot. I only hope that somebody will be willing to come to our aid if that turns out to be a major problem. I can see it happening.

MR. FOX: I am not sure that I understand you. The deal that we propose is that the workers, if the camps are inside the park, the cars will be parked at some point outside the park itself. In all probability a place like Revelstoke and/or Golden. The men will then be bused from the camp to those two points.

MR. JORGENSEN: On a daily basis?

MR. FOX: No, you will not have to go on a daily basis. When they finish their week's work or whatever their period of work is, they will then be bused to wherever it is their cars are or wherever it is they want to go in terms of what they can get at either Golden or Revelstoke. We certainly will not provide a bus service, I can assure you, from our work camps to the Glacier Park Lodge.

MR. JORGENSEN: No, but Greyhound would be more than willing to do that.

MR. FOX: Well, I do not care





E-5

1 about Greyhound. I am just telling you what we  
2 propose to do. If Greyhound wants to do something  
3 else, they had better come and see us.

4 MR. JORGENSEN: No, Greyhound  
5 travels that route regularly.

6 MR. FOX: I appreciate what they  
7 do.

8 MR. JORGENSEN: And that is the  
9 point I am getting to is that during that week that  
10 they are there or for how many days they are there,  
11 if they so chose to take in some other course of  
12 entertainment and flood our establishment, it would  
13 be nice to know that there would be somebody willing  
14 to do something about it if there was a problem in  
15 that area.

16 MR. FOX: I presume you are  
17 connected with the lodge up there, are you?

18 MR. JORGENSEN: That is correct.

19 MR. FOX: You did not say.  
20 What is your position?

21 MR. JORGENSEN: Assistant  
22 Manager.

23 MR. FOX: You are the Assistant  
24 Manager. Well, you know, after what I was told last  
25 year in Vancouver about what the goings on were up  
26 at that lodge on one occasion, I arranged to have  
27 my Inspector of Police, Mr. Graham from Vancouver  
28 look into this and he dealt with it with the RCMP  
29 concern, not only in Revelstoke, but the head





E-6

1 detachment for the area, and we could not prove,  
2 we could not come up, we could not find any scrap  
3 of evidence to support what was said.

4 Now, right after all that was  
5 said, your hotel, and I do not know who made the  
6 decision, somebody made a decision to take these  
7 workers in and board them at that hotel, obviously  
8 for the one reason of making a dollar. It seems to  
9 me that if you are running a public establishment  
10 and you are selling liquor there that you have a  
11 responsibility too, not only the railway, not only  
12 the contractor. You, I think, have the prime  
13 responsibility in my opinion.

14 MR. JORGENSEN: Well, that  
15 sounds pretty good except that if you were to come  
16 into our lounge at any one particular time, you would  
17 not find very many of them in there drinking the  
18 liquor that we offer for sale. Most of the liquor  
19 that they consumed was liquor that they brought into  
20 their rooms.

21 MR. FOX: Well, I do not know  
22 how you control a thing like that. I wish I did know  
23 and we would be able to control it perhaps in some  
24 of our work gangs and our cars, but it is an  
25 impossible thing to control, I can assure you.

26 MR. JORGENSEN: Well, we would  
27 take your daughter's application and seriously  
28 consider it if she wanted to work there. Maybe that  
29 would help control it.





1 MR. FOX: I am not getting into  
2 that argument with you. What I am saying is  
3 how do you control a man bringing liquor into his  
4 room? It can come in in his laundry; it can come  
5 in in his personal suitcase, and you, as an individual,  
6 certainly cannot open those things, and I cannot.  
7 So I am saying to you I do not know how you control  
8 it.

MR. JORGENSEN: Okay, but there  
is the park.

12 THE CHAIRMAN: If I could just  
13 follow up on that. Are you saying that your camps  
are supposed to be dry camps?

15 MR. FOX: We can call them dry  
16 camps, we can put up all kinds of notices and they  
17 still will bring liquor or beer into the rooms, Mr.  
Chairman, and there is no way you can control that.

I just had a long talk today with  
one of the largest contractors in B.C. about that  
very thing, and he told me, he said, Mr. Fox, I do  
not know how you control it. He says we have got  
all kinds of camps that are supposedly dry, but he  
says, we know damn well they have got beer and liquor  
in there, but he says, how do you control it, and it  
is an impossible thing to do. You cannot search  
the individual, unfortunately.

28 THE CHAIRMAN: Well, I have had  
29 some experience with oil rigs, and maybe it is a  
30 different situation if you are 200 miles off the shore.





5 MR. TENCH: Mr. McCrory, you  
6 mentioned here the possible alternate is to place  
7 a camp six miles outside the park boundaries, getting  
8 it out of the park. Do you think that if that did  
9 happen, I would imagine the workers would have their  
10 cars there, do you think the impact, the social  
11 impact on the park and the park amenities would be  
12 very much different by just moving these people that  
far away and leaving them with transportation to get  
into the park?

26 THE CHAIRMAN: Maybe I could ask  
27 Parks Canada again, do they share this concern about  
28 the activities of workers who might be at camps in  
29 the park at areas outside those particular camps?

In other words, do you foresee





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1 a problem with workers from the camps being in the  
2 park and you not being able to control that  
3 particular problem? Presumably if you have a  
4 problem now with somebody in the park you ask them  
5 to leave the park. With the camp being in the  
6 park, presumably the best you can do is send them  
7 back to their camp.

8 DR. LEESON: Well, to some degree  
9 I think the problem will exist in the park, a worker  
10 problem exist in the park whether the camp was  
11 located in the park or outside, but probably a little  
12 less outside simply because they are closer to urban  
13 centers and would be more inclined to go to those  
14 places to have fun.

15 THE CHAIRMAN: Well, you do not  
16 perceive a problem in terms of them being able to  
17 handle people that cause you a problem in the park,  
18 whether they are inside or outside. If it is  
19 not in a commercial establishment, you presumably  
20 would ask them to leave?

21 DR. LEESON: Oh yes. It would  
22 not make any difference where a troublemaker came  
23 from.

24 THE CHAIRMAN: Are there any  
25 other questions for Mr. McCrory or is there  
26 anybody in the audience who would like to ask a  
27 question.

28  
29 If not, I would like to thank  
30 Mr. McCrory for coming along and making his





E-10

1 presentation, and in particular, for taking the  
2 trouble to go through the amount of material that  
3 has been produced on this project to develop this  
4 presentation. Thank you for coming along.

5 MR. McCRORY: Thank you for your  
6 patience. There was just one question that was not  
7 answered by Mr. Fox, and that was question number 2  
8 regarding my observation that there are smoke plume  
9 from the east portal or at least I have seen them,  
10 and I am very glad that the vent stacks can be  
11 screened by the trees, but will there be smoke  
12 visible above those stacks, you know, and was  
13 that considered or what is the score on that?

14 MR. FOX: Yes, it was considered  
15 at great extent at the last hearing, I believe it  
16 was at Calgary where this was brought up if I am not  
17 mistaken on last year's panel, and the panel  
18 expert indicated, as I recall, if you held up a piece  
19 of white paper you would not see anything against it.  
20 Now, I am quoting the panel expert, but the actual  
21 evidence is in the proceedings.

22 It was looked at and has been  
23 looked at again so far as this goes, and it will be  
24 discussed in Calgary as well.

25 MR. McCRORY: I see. Thank you.

26 THE CHAIRMAN: If anybody else  
27 would like to make a presentation, ask some questions,  
28 members of the audience. Yes, a gentleman there,  
29 would you like to come up and use the microphone,





1 identify yourself.

2 MR. ARMSTRONG: My name is  
3 Richard Armstrong and I am a local resident here in  
4 town.

5 I assume I will be working in  
6 that CPR tunnel, and how will I get home to see my  
7 family at night if I am working 35 miles out of town?  
8 I would like to commute back and forth in my own  
9 vehicle if I am going to see my family. I do not  
10 think I want to be held hostage for five days in  
11 the camp or 24 days, whatever the work schedule is  
12 going to be, so how do you intend to go about that  
13 problem?

14 MR. FOX: Well, I will answer  
15 you this way and it will not be a very satisfactory  
16 answer. I have asked the same question, if we have  
17 local people working, how do they get back and  
18 forth, and I guess there are some things in the union  
19 contract that cover travel. I have been told by  
20 the contractors that a work camp that far from home,  
21 while you can drive it, you certainly would not drive  
22 it in the wintertime, I do not think, you can drive  
23 it but Parks Canada will not permit us to allow  
24 cars in the park itself for whatever reason they want  
25 to disallow it.

26 All I can do is go along with  
27 their request, and that is basically my problem right  
28 now. I would like very much to accommodate you, but  
29 I do not see how I can.  
30





MR. ARMSTRONG: Well, I see by your response if the camp is in the park. Mind you, I live in Revelstoke, somebody else might live in Malakwa or wherever it is. It might be commuting 70 miles daily, so double that, 140 miles. Lots of people will be doing that for, shall we say, eight months of the year anyway, and during the winter, the camp being close to the Trans Canada Highway, that Trans Canada Highway is open 99 per cent of the time. There will be lots of people if they do not commute daily, they might commute every other day, pools or things like that, considering we will be close to urban civilization.

I heard you mention you talked to unions and this and that. I do not know how far your discussions went, but let us take, for example, the tunnels that are going on in Tundra Ridge right now, Northeast Cole, where the work shifts are 24 on and eight off. I believe it would be extremely difficult to attempt to cage working men in your camp, whether it is in the park or six miles out of the park, that people will want to have their own vehicles and commute.

If you are 30 miles away or even 60 miles away from your family, I think it would be a little difficult to keep the men there for 24 days.

MR. FOX: I am inclined to agree with you. Now, you have to look, I think, at what





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they had to accomplish in the Northeast Cole that forced them to go to a 24 and whatever the days off were, and what they were actually doing there was working, I believe it was seven days a week, three shifts a day, facing a very tight deadline. We are fortunately not in that same situation, although we do want to get it done as quickly as we have to.

We will not have to go to a seven day work week, working with the swing shifts and everything else. What we hope to be able to do is whatever the men more or less work to, in other words, if you work a five day week or a six day week, that is what we hope to be able to establish and work it on that basis.

MR. ARMSTRONG: I see. Well, we will see what happens anyway. But if it does go something like 24 and eight or 12 and two, which usually happens -- I do not know if it will happen in this case -- they should keep in mind that lots of people will not want to stay in that camp for 12 days considering we are so close to civilization.

Thank you very much.

THE CHAIRMAN: Are there any other comments, questions from members of the audience at this time? We have a little bit of time left. We usually have some panel questions here.

DR. ROSS: As long as we are





E-14

1       on the subject of community impact or a social  
2       impact, I am wondering, perhaps Mr. McKnight or  
3       perhaps Mr. Fox, what sort of monitoring went on  
4       within the last year with respect to social impacts?  
5       Were there any discussions with the RCMP; were there  
6       any incidents related to the project in any manner  
7       which were reported to the RCMP?    Is there any  
8       information on the number of incidents, that sort of  
9       material?

10                    MR. FOX:    I do not know of any  
11       myself.  I do know that Mr. Gallagher had some  
12       discussions with the RCMP concerning putting an  
13       RCMP officer at the Pass   when the heavy construction  
14       part went on, and I must say that I think both of  
15       us were somewhat disconcerted  when we saw what went  
16       on at the Glacier Park Lodge.  Really, I think we  
17       both -- and Mr. Gallagher can certainly speak for  
18       himself, but I think we are more or less of the  
19       common opinion that based on what went on last year,  
20       there was no need for any concern.

21                    Now, beyond that, I do not know  
22       of any instance where police had to be called to  
23       handle whatever situation arose.  Now, perhaps Mr.  
24       Gallagher knows more about it than I do, but to the  
25       best of my knowledge, I do not know of anything.

26                    DR. ROSS:  If I understand your  
27       response, there was no formal monitoring of this?  
28       It is just a matter of whether you heard it or not,  
29       is that correct?

30





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1 MR. FOX: There was no formal  
2 monitoring on my part except through my supervisors.

3 DR. ROSS: Mr. Gallagher.

4 MR. GALLAGHER: Yes, thank you.

5 When I was made aware that there would be a camp  
6 in the park at Beaver Creek, I negotiated with  
7 Superintendent Collins, who is in charge of the  
8 division and he is stationed in Kelowna, and he  
9 assured me that he would have an RCMP officer in  
10 the area, Thursday, Friday, Saturday and Sunday, that  
11 is, located at the Pass, providing accommodation was  
12 provided for the officer. We have a staff room at  
13 the Pass, which is a three bedroom apartment.  
14 Consequently, I made that available to the RCMP  
15 officer.

16 I was quite surprised to hear  
17 from Mr. Soul that they did have problems at the  
18 hotel and I really do not know what prompted these  
19 or initiated them, but as far as I was concerned, we  
20 did have the RCMP there over the critical periods,  
21 the long weekends.

22 DR. ROSS: The RCMP were here  
23 every weekend during some period of time?

24 MR. GALLAGHER: Yes, during the  
25 summer months. I think Mr. Soul can verify that.

26 MR. SOUL: There was one  
27 particular incident where the RCMP officer in the  
28 Pass was called and a worker for the tunnel project  
29 was taken into custody and into Revelstoke. There  
30





E-16

1 was another marijuana smoking incident inside the  
2 hotel to which the RCMP reacted and they dealt with  
3 the problem themselves. There was a motor vehicle  
4 accident involving a tunnel worker on the Trans  
5 Canada Highway, and there were a number of smaller  
6 vehicle accidents as well as incidents of abuse of  
7 park property by motor vehicles driven by tunnel  
8 employees.

9 THE CHAIRMAN: Parks, you are  
10 aware of these incidents? Is this something out  
11 of the ordinary for your visitors?

MR. GALLAGHER: I was not made  
aware of those incidents at all. As a matter of  
fact, it is news to me and I did ask Mr. Soul why  
he did not bring them to my attention and he said  
he figured they were on their own.

DR. ROSS: I believe that one  
of our recommendations in the interim report was that  
community liaison action should begin immediately,  
and I would have expected some more interaction  
between the RCMP, the members of the public and so  
on and the Environmental Committee responsible for  
that. That is more what I was inquiring about the  
monitoring program established by the committee.

I am not sure I understand the  
issue of bused in workers to Revelstoke or to





E-17

1 Golden. I am not sure how frequently it happens,  
2 how long the workers would be in Revelstoke, what  
3 accommodation would they be likely to use, would it  
4 be overnight, just for the day, would it be for  
5 several days. I think you mentioned that you would  
6 create a specific area to store vehicles. If we  
7 are dealing with some 800 workers, then vehicle  
8 storage, the sudden impact of several hundred  
9 construction workers on a city the size of Revelstoke  
10 or Golden, especially if they had to provide  
11 accommodation for overnight, may indeed be of some  
12 concern.

I do not see that these issues  
were addressed in your response to us. I wonder if  
you might comment on that, Mr. Fox.

17 MR. FOX: No, they were not  
18 addressed, Dr. Ross. You know, we are not going to  
19 come in here with 800 employees and dump them into  
20 the middle of Revelstoke and then let them fend for  
themselves. That is not the way the system works.

What does happen is the idea of  
having a parking lot, let us say, in Revelstoke  
and/or Golden as a place for the employees who do  
drive to bring their vehicles. That does not say  
that all the people are going to drive. Some of  
them are going to take buses and other means of  
transportation to get here.





what we have to specify and really all we have to  
specify in a contract is there will be no parking  
in Glacier National Park, and really, it is up to  
the contractor. We will tell him he has to have  
a parking lot provided for him, but then he has to  
do the dealings with the union and make his own  
arrangements.

But the way I foresee it would  
be if they work, let us say, a Monday to a Friday  
night, and you have got shifts to worry about here.  
Some of the shifts will be starting, let us say,  
on the Monday night shift and they will not shift  
until the Saturday morning shift or however it works,  
and each one of those shifts, as they finish work  
and they are going home for a weekend, they will be  
bused individually to Revelstoke or Golden or wherever  
it is they want to go and can go. Once they get  
here, they will then take whatever transportation is  
available to get them home. That is the whole idea  
of letting them out of the camp.

We would imagine that during the  
week you would have to run probably twice a week  
service to one of these centers to allow these people  
that want to come in to come in and buy the basic  
necessities of life, although it can be bought in  
the commissaries .. within the camp itself, but you know,  
people being what they are, they may want to take  
a look around downtown and maybe go in and have a  
beer. After all, they are all human people, and you





E-19

1 know, they just do what every other human being does.

2 I do not really see a big problem  
3 myself.

4 DR. ROSS: In preparing the  
5 submission for us, did you consult with the RCMP  
6 on whether they might want to know what you are doing  
7 and how you are doing it? Did you consult with any  
8 members of the Revelstoke Chamber of Commerce or  
9 perhaps the Civic Government as well, because it  
10 seems to me that these are impacts for which these  
11 people ought to be alerted and for which they may  
12 have some particular advice in terms of well, if you  
13 just do it a little bit differently then the impacts  
14 can be reduced.

15 MR. FOX: No, I have not done  
16 that as yet.

17 DR. ROSS: Thank you.

18 MR. TENCH: Mr. Fox, your project  
19 is coming on the heels of the hydro project which is  
20 just terminating or has terminated. Have you got  
21 a parallel there with regard to numbers of people and  
22 treatment of people in camps?

23 MR. FOX: Well, I think the camp  
24 population at peak anyway, I do not know what it is  
25 today, at the camp at the damn site out here, but  
26 at the peak of it it was something like 2500 workers,  
27 and of course, they are within, what, three miles of  
28 Revelstoke, so it is not really the same type of  
29 situation.

30





E-20

1                   In other words, whoever was off  
2 shift could certainly and very easily get into  
3 Revelstoke either by buses if they had to, or even  
4 walk or take their own vehicles because they could  
5 park out there.

6                   MR. TENCH: So the impact on  
7 Revelstoke would be less with your size of crew?

8                   MR. FOX: In terms of numbers  
9 at least two-thirds less.

10                  MR. TENCH: Is there anybody in the  
11 audience who could explain what happened in Revelstoke  
12 while the hydro project was underway?

13                  THE CHAIRMAN: I guess we can  
14 always go for the information direct, George, if  
15 nobody has got it here. We can obtain that somehow  
16 or other.

17                  Any further comments, questions  
18 at this time? Mr. Fox, is there anything you would  
19 like to add after this evening's presentations?

20                  MR. FOX: I do not think so, Mr.  
21 Chairman. Thank you very kindly.

22                  THE CHAIRMAN: I do not believe  
23 there is anything more from the panel at this time.

24                  I would therefore like to thank  
25 the people who came along this evening for coming  
26 along, Mr. McCrory for coming along to make a  
27 presentation, Parks Canada and CP Rail.

28                  We will be adjourning this  
29 meeting now and we will be restarting our hearings  
30





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1      in Golden tomorrow. Thank you very much for  
2      coming along.  
3      ---Whereupon the hearing adjourned at 9:30 p.m.  
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ROGERS PASS ENVIRONMENTAL  
ASSESSMENT PANEL

PUBLIC MEETINGS

CP RAIL ROGERS PASS DEVELOPMENT PROJECT

PLACE: Golden, B.C.

DATE: June 9, 1983.

VOLUME: II

OFFICIAL REPORTERS

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1 ROGERS PASS ENVIRONMENTAL  
2 ASSESSMENT PANEL

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4  
5 In the matter of Public Meetings of the  
6 Environmental Assessment Panel on CP  
7 Rail's proposed new track development  
8 in Rogers Pass.

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10  
11

12 PANEL MEMBERS:

13

P.J. Paradine -- Chairman

14

Dr. W. Ross

15

Mr. G. Tench

16

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Held in the Curling Club, Golden, British Columbia, on Thursday, the 9th day of June, 1983, at the hour of 7:00 p.m., Local Time.

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VOLUME II

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PM-1-A  
(Golden)  
June 9/83

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1

1 THE CHAIRMAN: (P. Paradine)

2 Good evening Ladies and Gentlemen.

3 I hope you can all hear me in the room here tonight.  
4 If any of you are having difficulty, please indicate.  
5 There are a few more seats up at the front if you  
6 wish to take some of those.

7 I am Phil Paradine. Those of  
8 you who remember me from last year remember that  
9 I am Chairman of the Environmental Assessment  
10 which is reviewing C.P.'s proposal for tunnelling  
11 and twinning of track through the Rogers Pass in  
12 Glacier National Park.

13 The members of the Panel are on  
14 my left: Bill Ross and George Tench. This is  
15 our final round of meetings tonight and on into  
16 Calgary the next couple of days. The purpose of  
17 these meetings is to advise the Minister on the  
18 means by which the project can proceed in an  
19 environmentally sound manner. This is done and is being  
20 done in accordance with terms of reference provided  
21 by the Minister of Environment. These terms of  
22 reference are included in the Preliminary Report,  
23 copies of which, I believe, are available at the  
24 back of the room..

26 In the Preliminary Report we  
27 requested further information from C. P. Rail and  
28 that was provided to us in April of this year and  
29 was passed out to the public, and we are now  
30 requesting views from the public based upon this



1 information that has been provided. Following  
2 this meeting and using this information that has been  
3 provided to us, we will be preparing a Final Report  
4 to the Minister of Environment.

5 The project has been approved  
6 in principal by the Canadian Transport Commission  
7 and the mandate of the Panel, therefore, is to  
8 determine the best way to minimize the impacts  
9 on the environment. If you wish to receive  
10 a copy of our Final Report, please leave your  
11 name at the back of the room and we will provide  
12 that to you when it is released by the Minister  
13 of Environment.

14 As far as procedures are concerned,  
15 I will not deal with them in detail but basically we  
16 will be having a presentation tonight by C.P. Rail,  
17 a general presentation; following we will allow  
18 time for presentation from members of the public,  
19 followed by questions and answers to clarify anything  
20 in the presentations.

21 After coffee break we will be  
22 having a presentation on wildlife and then we will  
23 be following up again with question and answer  
24 sessions and any remaining statements.

25 We are making transcripts of the  
26 record and if you do make a presentation I would  
27 ask that you identify yourself. There is a  
28 microphone at the front here and if you are making  
29 a presentation where you can sit down next to the



1                   Panel Secretary, Guy R. Riverin       We will be  
2                   having a coffee break and if you have any  
3                   questions at that time please approach the Panel  
4                   or C. P. Rail.

5                   I think I would like to begin  
6                   then with C. P. Rail. I should just indicate that if  
7                   anybody wants to register to speak, please let  
8                   Suzanne Latour or Guy R. Riverin know. The first  
9                   presentation will be by Mr. Fox, and I will hand  
10                  it over to you now Mr. Fox.

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1                   (Fox)

2                   MR. JOHN FOX, (C.P. Rail):

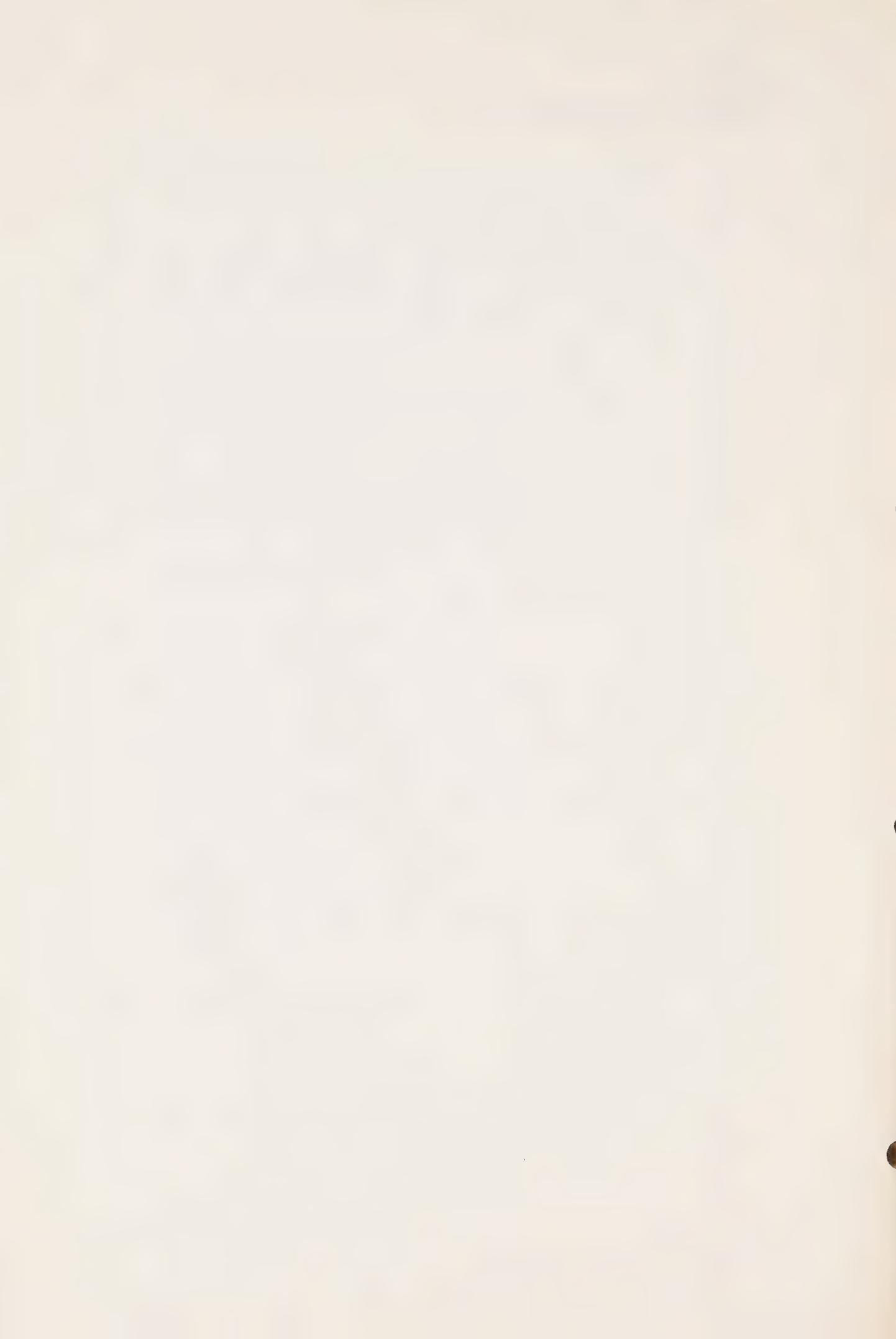
3                   Thank you, Mr. Chairman; Ladies  
4                   and Gentlemen. Last year when I was here I gave  
5                   a rather complete coverage of the requirements of  
6                   C. P. Rail insofar as this new track is concerned,  
7                   including traffic and the basic need for what  
8                   we are proposing. I do not propose to cover that  
9                   ground again. What I will do is give you a very  
10                  general broad brush of what we have done in the  
11                  past year and perhaps I could say where we are standing  
12                  at the present time.

13                  The Federal Environmental Assessment  
14                  Review Office interim decision in May of last year  
15                  allowed us to proceed with the portal construction  
16                  for the Rogers Pass Tunnel and clearing of the surface  
17                  route for an access road to carry out further  
18                  environmental and geotechnical investigations.

19                  The west portal structure was  
20                  completed last year and repaving of the Trans  
21                  Canada Highway is presently being completed.  
22                  Access to the east portal and the retaining walls at  
23                  the east portal were completed last year and rock  
24                  excavation is presently underway.

25                  The surface route from Rogers to  
26                  the east portal of the short tunnel was cleared for  
27                  the investigations to be described later.

28                  As you have seen by the reports  
29                  we have presented to you, and the responses we  
30                  have made to your further requests for information,



1                   (Fox)

2                   C.P. Rail has done a very large amount of work in the  
3                   14 months since the meeting last April. I feel  
4                   that we have more than adequately met or exceeded  
5                   the requirements for further information requested  
6                   by you and Parks Canada. I am looking forward to  
7                   these meetings to allow us to thoroughly present  
8                   the information to you and the public. We appreciate  
9                   the opportunity to describe and discuss work completed  
10                  to date and to demonstrate our commitment to complete  
11                  the Rogers Pass project with the highest level of  
12                  concern for the environment of Glacier National  
13                  Park.

14                  I am also looking to these meetings  
15                  to serve as a forum to answer any and all questions  
16                  that the Panel, their experts and Parks Canada may  
17                  have on environmental, engineering, or commitment  
18                  issues. We have available for these hearings all  
19                  the experts who have worked with C. P. Rail over  
20                  the last year, and in many cases since the  
21                  beginning of the project. We have done this to  
22                  ensure that as many requests for information as  
23                  possible can be answered during the hearings.  
24                  So if you want to ask any of these experts any  
25                  questions, they are all sitting over here -- the  
26                  whole gang of them.

27                  The report entitled "Rogers Pass  
28                  Project: Submittal to Federal Environmental Assessment  
29                  Review Office", dated June, 1983 was prepared  
30





1                             (Fox)

2 specifically for this hearing, and that is the  
3 Red Book that is on the back table. I think most  
4 of you perhaps have picked one up.

5                             In this Report and all the other  
6 environmental and engineering reports previously  
7 submitted, we have made every attempt to respond  
8 to all expressed concerns. I also believe that  
9 we have responded to both the Panel's and Parks  
10 Canada's recent requests for further environmental  
11 information.

12                             Our basic approach has been to  
13 define terms of reference for all studies through  
14 discussions with Parks Canada. When work was  
15 completed in mid-February of this year, we asked  
16 Parks Canada and their experts to come to a workshop  
17 to discuss results of all studies and to ask  
18 for their comments and suggestions. We then  
19 submitted draft copies of all reports to Parks  
20 Canada prior to finalizing them for the FEARO Review.  
21 We have responded to Parks Canada's subsequent  
22 comments, as well as to a list of items which  
23 the Panel indicated were not addressed completely,  
24 either verbally, or in the reports submitted prior  
25 to this meeting.

27                             I do not plan to elaborate on all  
28 the environmental studies we have conducted, as I  
29 have consultants here who are more able to discuss  
30 the technical details, and who will do so in the



1                   (Fox)

2 appropriate sessions. However, I would like to give  
3 a brief summary of the work we have done in preparation  
4 for this public meeting and the work we will be  
5 doing in the future to ensure that the new  
6 railway is built to respect the National Park through  
7 which it passes.

8 Requests for further information  
9 have come from two sources -- the Panel in their  
10 preliminary Review last April, and Parks Canada in  
11 meetings since that time. The Panel's requests  
12 were grouped into five aspects of the project: the  
13 Rogers Pass Tunnel, the ventilation shaft, the  
14 surface route, the work force and the responsibility  
15 for mitigative measures and monitoring.

16                   Looking at the questions on the Roger  
17 Pass tunnel first -- the proposed new track will pass  
18 through one avalanche path, that being the Ross  
19 Peak Slide, which is located at the west portal of the  
20 Rogers Pass Tunnel. Automatic signals will govern  
21 trains at this location, enabling a westward train  
22 to stop within the portal structure. Eastward  
23 trains can stop clear of the west perimeter of the  
24 Ross Peak Slide.

25                   The existing program of working with  
26 Parks Canada and the Canadian Army to control avalanches  
27 by means of gunfire will be continued. Procedures  
28 now used in controlling train movements in affected  
29 areas will be continued.



1                             (Fox)

2                             With regard to disposal of material,  
3 Parks Canada has stipulated, no spoiling and no  
4 borrowing within the Park boundary, so we have come  
5 up with the following general approach -- balanced  
6 cuts and fills on the surface route east of the  
7 tunnels and use of a minor amount of material as  
8 subgrade for double tracking to the west.

9                             Concern was raised for the  
10 environmental effects of the double tracking to  
11 the west, so our environmental consultants identified  
12 the potential concerns in a report directed to the  
13 Panel.

14                             Water use and waste water treatment  
15 have received considerable study in the past year.  
16 Basically, we will need water for three purposes:  
17 tunnel drill cooling and lubrication, cement plants,  
18 and camp operation. We need water for drilling  
19 at both portals of the Rogers Pass tunnel, the  
20 ventilation shaft and at the west portal of the short  
21 tunnel.

22                             We plan to pipe water from the Beaver  
23 River at the east portal of the Rogers Pass tunnel.  
24 Water for the west portal of the short tunnel  
25 will come from Connaught Creek. A small stream  
26 will supply water for the ventilation shaft, and  
27 water for the west portal will come from the  
28 Illecillewaet River. After use, this water will be  
29 treated in an oil separator and settling ponds





1                   (Fox)

2                   before being released into the Beaver or Illecillewaet  
3                   River or the small stream near the ventilation shaft.

4                   We have outlined a monitoring and  
5                   contingency system to ensure that the water treatment  
6                   system works as designed. This system is described  
7                   in the report submitted to these hearings.

8                   Final proposed sites for settling ponds  
9                   were based on reactions of Parks Canada to our report,  
10                  submitted to them in March, in which we identified  
11                  several possible sites at each location.

12                  Another use of water will be for the  
13                  cement batch plant which we propose to locate at  
14                  Glacier.

15                  A full description of the plant,  
16                  its operation and pollution controls has been  
17                  given in the report submitted to these hearings.

18                  Water will also be required for  
19                  camp operations. The water will be released after  
20                  treatment into the source rivers.

21                  The location of the ventilation  
22                  shaft was one of the most controversial topics at  
23                  the last hearings. At the hearings, I proposed  
24                  an alternative location for detailed investigation.  
25                  A further alternative site has been selected and  
26                  approved by Parks Canada. Access to the site has been  
27                  constructed and the site has been cleared for detailed  
28                  geotechnical investigations.



1                   (For)

2                   Air quality studies submitted  
3                   separately verified the quality of tunnel emissions  
4                   was acceptable and within the federal guidelines.

5                   A study of the noise associated with  
6                   ventilation operations confirmed that the noise levels  
7                   would not adversely affect the public in the Park  
8                   environment.

9                   Concern has been raised for the  
10                  visibility of this structure, so we have conducted  
11                  studies to see if and from where it would be  
12                  visible to the users of the Park. This study will  
13                  be fully described in Calgary at the designated  
14                  session by our visual assessment consultant.  
15                  However, I would like to briefly summarize what we  
16                  found.

17                  We conducted experiments by tethering  
18                  red balloons at the proposed locations and elevation  
19                  of the tops of the vent stacks in the existing  
20                  clearing. We found that only the top few feet of  
21                  the two stacks could possibly be seen from various  
22                  viewpoints.

23                  The Rogers Pass surface route  
24                  design was a process designed using all available  
25                  techniques and mitigative measures to develop a  
26                  realistic design that respects the integrity of  
27                  the existing environment and the highest engineering  
28                  practices. During this process, C. P. Rail  
29                  engineers worked in close collaboration with



1                   (Fox)

2                   landscape architects and reclamation specialists  
3                   to develop optimum environmental and engineering  
4                   solutions. The following were considered:

5                   1) Geometrical: The maximum  
6                   horizontal curvature of 6 degrees, maximum grade  
7                   of 1 per cent compensated on curves at the rate  
8                   of 0.04 per cent per degree of curve.

9                   2) Hydrological: Adequate  
10                  clearance and bridge design at stream crossings  
11                  considering both anticipated river discharges  
12                  and debris flows.

13                  3) Geotechnical: slope stability,  
14                  groundwater control and soil preparation, design  
15                  of cut and fill slopes and retaining structures.

16                  4) Environmental: Minimal visual  
17                  impact, and minimal overall terrain impact.

18                  5) Construction: Feasibility of  
19                  completely balancing earth quantities within the  
20                  Park.

21                  6) Existing topography: Steep  
22                  slopes, landslide areas.

23                  7) Climatic conditions: Groundwater  
24                  clearances and frost protection.

25                  8) Schedules: Coordination of  
26                  activities.

27                  9) Structural adequacy: This  
28                  will be a permanent facility.



1                   (Fox)

2                   Investigations for the design of  
3                   the surface route encompassed both engineering and  
4                   environmental studies.

5                   The hydrological aspects of stream  
6                   crossings were investigated in detail with  
7                   design considerations developed for both water  
8                   and debris flows.

9                   Three landslide areas have been  
10                  identified and have been investigated. These include  
11                  the Griffith Landslide, an unnamed landslide  
12                  and what we call the wet slide area. These will  
13                  be discussed in detail in the Calgary technical  
14                  sessions.

15                  Primary consideration was given to  
16                  designing the railway to meet railway standards.  
17                  However, within this constraint environmental  
18                  considerations had the most important influence on  
19                  selection of the proposed design and detailed  
20                  route location.

21                  Despite the engineering constraints  
22                  to maintain structural and overall adequacy, the  
23                  alignment and design were modified to minimize the  
24                  visual impact of the completed railway. Environmental  
25                  considerations and potential impacts generally  
26                  decided the proposed design and location.  
27                  Reclamation procedures, balancing earth quantities  
28                  and schedules to meet environmental requirements were  
29                  developed.



(Fox)

One major part of our work over the past year has been reducing the visual impact of this project to the minimum practicable by combining engineering requirements with landscape architecture and reclamation techniques. Our results are shown on the various side panels.

In order to fully appreciate the potential visual implications of the new surface route in the Beaver River Valley, we undertook what is probably the most comprehensive visual impact assessment ever done in Canada. We will fully describe that procedure in the scheduled presentation in Calgary on Saturday. However, I would like to briefly outline the interactive process between C.P. Rail and its consultants to minimize to as much as possible the visibility of this tract after our reclamation is complete.

The first step was to develop a complete inventory of all the visual features as seen by eastbound and westbound travellers on the Trans Canada Highway. This provided us with some interesting results. First, we realized that the landscape is visually diverse and complex so it has a moderate to moderately high capability of visually absorbing disturbances. We were also able to identify those sections of the valley that were the most visually sensitive from the perspective of Park visitors using the Trans Canada Highway.



1                   (Fox)

2                   The use of computer-aided  
3                   methods made it possible to develop five different  
4                   designs, each one a refinement of its predecessor.  
5                   The refinement process focussed on the visually  
6                   sensitive areas and consisted of making adjustments  
7                   to the alignment to reduce cuts and fills as well  
8                   as locating numerous retaining walls and bridge  
9                   structures. Parks Canada reviewed the fourth design  
10                  in detail, and gave us comments which we incorporated  
11                  into the final.

12                  The results of this process was  
13                  a significant reduction in the potential for  
14                  adverse visual impacts.

15                  In summary then, the alignment  
16                  that we present to you is the most refined of all  
17                  the designs and is our best possible effort to protect  
18                  the visual integrity of Glacier National Park while  
19                  meeting the engineering requirements of a high  
20                  capacity rail line.

21                  With the input from the visual impact  
22                  assessment, the environmental studies and the  
23                  engineering studies, we have also prepared a plan  
24                  for reclamation of the cuts and fills along the  
25                  surface route at the Beaver River Valley. The  
26                  reclamation program has been integrated with the  
27                  engineering plans to provide the very best program  
28                  possible. It has been designed to provide for  
29                  the rapid revegetation of exposed slopes as well  
30



1                   (Fox)

2                   as for the establishment of a permanent cover of  
3                   trees and shrubs native to Glacier National Park.

4                   We will be taking special measures  
5                   to ensure that erosion is controlled and that  
6                   reclamation is conducted as quickly as possible.  
7                   Our consultant has been conducting a number of  
8                   reclamation trials and tests in the Beaver River  
9                   Valley and we are confident that he has developed  
10                  procedures that will permit us to effectively  
11                  reclaim the disturbed areas.

12                  I will not go further into the  
13                  details of the program now, as we will be  
14                  presenting these on Saturday in Calgary. However,  
15                  I would like to point out that we are committed to  
16                  providing the best possible reclamation of the disturbed  
17                  areas. It is this commitment to excellence throughout  
18                  the whole job that allows me to assure you that the  
19                  landscape will be reclaimed to a state that respects  
20                  the goals of a National Park.

21                  The right-of-way required was  
22                  determined from the slope stake information along the  
23                  proposed design. The right-of-way was established  
24                  by locating it a minimum of 30 feet away from the  
25                  slope stake limit. Clearing will extent to 10 feet  
26                  outside the slope stake limit. One hundred fifty-  
27                  eight acres will be cleared inside the Park.

28                  In response to the concern that  
29                  downstream aquatic environments could be affected



1                   (Fox)

2                   by surface runoff during and after construction,  
3                   we conducted a study in 1982 to establish monitoring  
4                   criteria. The results of that study are presented  
5                   in our report submitted to the Panel, and I will not  
6                   elaborate on them at this time. This study will be  
7                   discussed in the Calgary Technical Session.

8                   The surface route construction and  
9                   reclamation will take place during the summers of  
10                  1984 and 1985, except for the elevated deck  
11                  structure which will be installed in the summer  
12                  of 1986.

13                  All other construction will begin  
14                  in the spring of 1984 with scheduled completion  
15                  in November of 1988.

16                  C. P. Rail has developed and  
17                  separately submitted construction procedures for  
18                  the surface route.

19                  We have gone into some detail  
20                  in the report on the procedures for handling  
21                  toxic or hazardous substances. However, I will  
22                  simply state here that we will specify in our  
23                  contract documents that all contractors must meet  
24                  Federal guidelines for storage, handling and  
25                  transportation of all fuels and other chemicals.  
26                  Contingency measures must be put in place to avoid  
27                  any negative environmental effects in the event  
28                  of accidents. The Environmental Coordinator  
29                  will have the authority to ensure that standards are





1                   (Fox)

2                   maintained.

3                   During operation of the railway,  
4                   C.P. Rail has strictly enforced procedures  
5                   that are followed when dangerous commodities are  
6                   transported anywhere on the rail network.

7                   Passenger train speed on the new  
8                   line will be 30 miles per hour maximum. Heavy  
9                   bulk commodity trains will generally be travelling  
10                  at approximately 15 miles per hour. At this speed,  
11                  a derailed car will in all probability remain on the  
12                  grade, thus minimizing the probability of any toxic  
13                  spill.

14                  Power for the ventilation system  
15                  and tunnel lighting will be brought from Revelstoke  
16                  with a 34.5 KV transmission line. The power  
17                  circuit will be run along C. P. Rail's right-of-way  
18                  in an underground trench within the Park. The buried  
19                  cable trenches will be located in the ditch within  
20                  the C.P. Rail right-of-way.

21                  Concerns passed that the second  
22                  track may result in more moose collision deaths of moose  
23                  caused us to do a detailed study of moose movements  
24                  this past winter.

25                  In brief, we found that there may  
26                  be less than 10 moose in the Beaver Valley in Glacier  
27                  National Park and if there is a potential problem,  
28                  it is likely to occur primarily at Mountain Creek.  
29                  However, the conclusive evidence indicates that the



1                   (Fox)

2 major threat to moose is on the highway and not  
3 the railway. Our consultant has proposed mitigative  
4 measures which we hope Parks Canada, who are  
5 responsible for managing the moose in the Park,  
6 will consider.

7                   C. P. Rail requested permission  
8 to construct work camps at Flat Creek and Beaver  
9 gravel pit, which are two previously disturbed  
10 sites. Concerns were expressed that the camps  
11 at these sites would have detrimental effects on  
12 caribou and grizzly bears. We prepared a detailed  
13 report on the subject. Basically our biologists  
14 concluded that the Flat Creek camp would have a  
15 minimal effect on the small caribou population.  
16 However, they indicate that unless very strict  
17 management is followed through, bears could be a  
18 problem. We have taken their advice into  
19 consideration in our design and have asked Dr.  
20 Stephen Herrero to provide us with advice on  
21 bear management considerations. Dr. Herrero will  
22 attend the session on Friday night in Calgary.  
23 Despite general agreement from Parks Canada on the  
24 conclusions in that report, they have recently  
25 advised us that they will oppose campsites within  
26 the Park. We have investigated camps outside the  
27 park as well as alternatives within the Park.

28                   As we have indicated in the report  
29 submitted to this hearing, the prohibitive costs  
30



1                   (Fox)

2                   of locating outside the Park are not justified for  
3                   the reasons given by Parks Canada. For economic  
4                   reasons, therefore, we request that the camps  
5                   be approved in the Park as originally agreed to  
6                   by Parks Canada in their statement to this Panel  
7                   last year. Details on the camps will be  
8                   discussed in the session Friday evening in Calgary.

9                   In addition to the studies carried  
10                  out in response to the Panel's requests, we have  
11                  also undertaken several studies to answer questions  
12                  raised by Parks Canada at or since the hearings  
13                  last year.

14                  At the hearings, we were asked to  
15                  see if there were any raptor nests along the right-of-  
16                  way and to determine if the elk seen by Canadian  
17                  Wildlife Service personnel were still at Stoney  
18                  Creek. These studies were requested prior to  
19                  clearing the surface route or building the access road  
20                  at Stoney Creek. In surveys conducted immediately  
21                  after the hearings, no raptor nests were found on or  
22                  near the route and it appeared that the elk had  
23                  left some time before the survey.

24                  With that information, Parks  
25                  Canada gave us permission to build the access road.  
26                  Prior to clearing the access road, biologists conducted  
27                  vegetation and wildlife surveys. These are  
28                  summarized in the report tabled for these hearings.  
29                  The vegetation information will be used as a



1           (Fox)

2           catalogue for the reclamation plan to ensure  
3           that continuity with the surrounding vegetation is  
4           eventually achieved.

5                         The FEARO Panel concluded last  
6           June that a committee concentrating on  
7           environmental issues was required. An Environmental  
8           Coordinator was also specified and one has been  
9           employed since shortly after the FEARO hearings.

10                  The Committee structures in  
11           place are as follows:

12                  A steering committee is  
13           responsible to sanction all plans and ensure all  
14           items are dealt with in a timely manner and act  
15           as an arbitrator.

16                  An environmental committee ensures  
17           that conditions established by the FEARO Panel are  
18           carried out and approves environmental aspects of  
19           plans.

20                  Design committee reviews design  
21           before and during construction to ensure that it  
22           is environmentally acceptable.

23                  The implementation committee  
24           deals with problems that may arise and serves as  
25           a formal communication medium for its members and  
26           solves day-to-day problems and seeks guidance from the  
27           environmental committee. It is proposed to  
28           maintain the above committee structures for the  
29           construction project.



PM

1                   (Fox)

2                   The role of the environmental  
3                   coordinator is to serve as the day-to-day contact  
4                   for Park wardens and other inspectors and ensure  
5                   that construction operations are carried out by  
6                   the contractors using good environmental practices and  
7                   in accordance with the agreements reached by the  
8                   committee.

9                   A complete monitoring program  
10                  has been developed for tunnel effluent, sewage  
11                  treatment, visual considerations, reclamation and  
12                  work camp monitoring.

13                  C. P. Rail has demonstrated its  
14                  interest in environmental protection by producing  
15                  a number of exhaustive studies in response to the  
16                  concerns of FEARO and Parks Canada.

17                  State-of-the-art technology was  
18                  used to allow environmental planners, reclamation  
19                  specialists and engineers to work in an interactive  
20                  way to produce a design that will minimize terrain  
21                  and visual impact.

22                  This dedication to the various  
23                  mitigation measures outlined in this report will  
24                  continue throughout the construction phase  
25                  and subsequent reclamation. An extensive monitoring  
26                  program, erosion contingency measures and adherence  
27                  to the highest standards of environmental protection  
28                  will assure construction of a second track that  
29                  respects the natural integrity of Glacier National  
30                  Park. Thank you very much.





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BN-bn

1 THE CHAIRMAN: Thank you, Mr. Fox.

2 Do we have any presentations from anybody here in the  
3 audience tonight? If you would like to come up  
4 to the front here and sit down. I can see the sound  
5 is not very good.

6 If you would like to come up and  
7 make your presentation from the table here.

8 CHRIS SCHIESSER (Big Bend Resource  
9 Society): Chris Schiesser, and I am representing  
10 the Big Bend Resource Society.

11 We would like to express our  
12 appreciation of receiving copies of all Panel reports  
13 ahead of time, thus enabling our members to assess  
14 the revisions of the original plans.

15 I have a note here. As a conservati  
16 group, we regret that this valuable information is  
17 printed on one side only of the paper.

18 The Golden area is concerned mainly  
19 over two topics. First, the reclamation of surface  
20 disturbances in the area between Cupola Creek and  
21 the Park boundary near Mountain Creek. We would like  
22 to be assured that the reclamation will be monitored  
23 in the same manner as within the Park.

24  
25 Secondly, the location of work  
26 camps. There appears to be a conflict; as the Parks  
27 Department has stated, it is opposed to locating  
28 camps within Park boundaries at Beaver and Flat Creek  
29 while the C.P.R. is so far adhering to their orig  
30 proposed sites within the Park due to the added



18-2

1       (Schiesser)

2       expense of locating them outside of the Park.

3                     As the Beaver site was used in  
4                     the construction of Highway number 1 and is still  
5                     visible, it would seem to be acceptable for the  
6                     railway construction. Bear problems would be  
7                     minimal at this location. There is far more likelihood  
8                     of bear problems at Cupola Creek should a camp be  
9                     located there.

10                  However, the Flat Creek site is  
11                  located at a former natural caribou crossing from  
12                  Bostock Creek, and while few sightings of these  
13                  animals have been reported recently, a study of these  
14                  animals in Glacier Park is scheduled, I believe, for  
15                  1984. The alternate site suggested at Illecillewaet  
16                  is relatively close to the Park boundary and would  
17                  appear to be quite acceptable

18                  At both these sites, the proposed  
19                  reclamation plans would greatly improve the present  
20                  appearance of these sites as visible from the highway.

21                  In view of the importance of the  
22                  double tracking of the C.P.R. in order to provide  
23                  more efficient transport of goods and passenger  
24                  services in the future, the environmental plans as  
25                  now proposed appear to be adequate and acceptable.

26                  THE CHAIRMAN: If you could just  
27                  hold on there for a moment, Miss Schiesser, in case  
28                  there are any questions. I am going to ask, first  
29                  of all, C.P. Rail if they have any comment or any





B-3

1 questions following that presentation?

2 MR. FOX: Thank you, Mr. Chairman.

3 I do not have a question, but I would like to make  
4 a comment.

5 I believe your first concern was  
6 relative to the reclamation between the west end of  
7 the Rogers siding up to the Park boundary; is that  
8 correct?

9 MRS. SCHIESSER: Yes.

10 MR. FOX: I can assure you it will  
11 be reclaimed to the same standard as we are using  
12 within the Park itself.

13 MRS. SCHIESSER: Thank you.

14 THE CHAIRMAN: Panel, do you have  
15 any questions? Bill Ross?

16 DR. ROSS: Mrs. Schiesser, I am  
17 not sure I understood your last point about the  
18 work camps. You indicated that the environmental  
19 plans and so on of C.P. Rail were adequate. Was  
20 that specifically for the work camps in the Park  
21 at Flat Creek and at Beaver Creek, or was that  
22 specifically for work camps outside of the Park?

23 MRS. SCHIESSER: Well, there is no  
24 mention of the work camps outside of the Park. The  
25 provisions within the Park are adequate as far as  
26 I am concerned.

27 DR. ROSS: So you find the provisions  
28 for the camps within the Park to be acceptable then?

29 MRS. SCHIESSER: Yes.





B-4

1 DR. ROSS: Thank you very much. I  
2 was not certain of that.

3 THE CHAIRMAN: I understood that  
4 you had a problem with the Flat Creek side, but  
5 the Beaver Creek to you was acceptable.

6 MRS. SCHIESSER: Yes.

7 THE CHAIRMAN: Any questions from  
8 members of the audience on this? Parks Canada, is  
9 there anything you want to ask or any comments?

10 Thank you very much, Miss Schiesser.

11 Do we have any other presentations  
12 at this time?

13 Perhaps, Panel, traditionally we  
14 ask some questions after C.P. Rail's presentation.  
15 Probably the Panel has some questions concerning  
16 your presentation, some general questions, and then  
17 if there are any members of the audience who have  
18 questions, we can pass to them.

19 George Tench, you have a question?

20 MR. TENCH: A question for Parks.  
21 Have you had a chance to review C.P. Rail's concrete  
22 batching plant arrangement at Glacier? Have you got  
23 any comments on the location of that batching plant  
24 and any comments on the pollution control measures  
25 that they are outlining? Are you satisfied with  
26 these arrangements?

27 MR. GALLACHER: We have not had an  
28 opportunity to review the plans for the batching plant.  
29 They did have a plant there last year and if it  
30





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1           operates in any manner like that one did, I think  
2           we will be very satisfied.

3                     DR. ROSS: Excuse me, I wonder if  
4                     I might pursue that one a little bit farther.

5                     I wonder, perhaps, Mr. Gallacher,  
6                     if you could inform me are there any standard air  
7                     quality monitoring procedures that are associated with  
8                     batch plants or cement plants in the Park? Would  
9                     that follow as a matter of course?

10                    MR. GALLACHER: Yes, that would  
11                    follow as a matter of course. There are standards for  
12                    batching plants.

13                    DR. ROSS: But is the performance  
14                    monitored in terms of air quality and so on?

15                    MR. GALLACHER: Well, we could have  
16                    it monitored. We have a scientific task force that  
17                    is qualified to monitor such things.

18                    DR. ROSS: I see. I wonder, Mr.  
19                    Fox, if you know of any plans to monitor air quality  
20                    associated with the batch plants? Is that something  
21                    that you would do regularly or ---

22                    MR. FOX: Well, certainly we are  
23                    very concerned about it and the contractor will be  
24                    advised that any operations such as you are mentioning  
25                    batching plants, the air quality at and around the  
26                    plant will have to meet the federal guidelines, so  
27                    monitoring will take place to ensure that that  
28                    standard is met.

29  
30                    DR. ROSS: I am tempted to go off





B-6

1 onto monitoring, but I think I interrupted Mr.  
2 Tench.

3 MR. TENCH: No, go ahead.

4 DR. ROSS: In terms of monitoring  
5 not just air quality, but monitoring generally, I  
6 gather there are a number of comments on exactly  
7 what you propose to monitor in the red book, but it  
8 seems to me that the objectives of monitoring are  
9 largely two-fold, one of which is to identify any  
10 problems and to provide remedial measures, but the  
11 other one is to provide information to C.P. Rail,  
12 to others in terms of how mitigation measures work,  
13 what problems do arise, and in that respect,  
14 monitoring somehow has to be coupled with evaluation  
15 of the various mitigation measures that are in force  
16 and must be coupled with some provision of information  
17 to the public so that the public can see that these  
18 mitigation measures are working properly so that  
19 other people who may wish to use them at later dates  
20 will have good information and what works and what  
21 does not, just in the same sort of a way as your  
22 work has relied on the work of others, some of the  
23 water quality efforts that have taken place in B.C.  
24

25 I wonder if there are plans  
26 related to this monitoring to make the results of  
27 the monitoring public, not just in terms of the  
28 numbers that come out in the air quality monitoring,  
29 for example, but rather with an evaluation of the  
30 success of environmental mitigation measures and



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1 descriptions so that others may know how to use  
2 them. Are there some plans for that as well?

3 MR. FOX: Well, I had not quite  
4 thought of carrying out that type of investigative  
5 procedure and then putting it in print, but certainly  
6 with the monitoring going on, there is no harm in  
7 keeping, let us say, monthly records, and every six  
8 months or whatever the period might be putting  
9 together a document indicating what we are doing,  
10 what we have found and how we are handling various  
11 problems as they arise and what the results of our  
12 efforts are. I think perhaps that is what you have  
13 in mind, is it not?

14 DR. ROSS: Well, that and some  
15 evaluation I think may also be important. But in  
16 some ways that is inherent in monitoring.

17 MR. FOX: I am not sure, you know,  
18 public-wise what bodies we would be giving it to.  
19 I can see perhaps giving it to the Environmental  
20 Panel; I guess it would be useful to universities  
21 that work in that line. I would suggest that the  
22 general public at large, some people of course would  
23 be interested, but I would suggest that a large  
24 number of them, number one, perhaps would not  
25 understand what you are doing, and number two, there  
26 would be a great number that would not care really.

27 DR. ROSS: I think in large part  
28 you are right. It would be the environmental science  
29 profession, interested environmental groups, Parks



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1 Canada and others; technical agencies, of course,  
2 would be interested as well.

3 MR. FOX: I would suggest perhaps  
4 if the information was assembled and people advised  
5 that it is available for anyone that perhaps might  
6 want to look at it, that can certainly be arranged.

7 DR. ROSS: Thank you.

8 THE CHAIRMAN: George Tench.

9 MR. TENCH: Mr. Fox, on this  
10 monitoring, there seems to be a tendency to monitor  
11 things that have gone wrong, for example, watching  
12 the siltation downstream on some of the creeks  
13 below the construction. What measures would you  
14 take with the contractors to try to prevent these  
15 things happening in the first event, or have you got  
16 anything more than the usual contract requirements  
17 to stop heavy erosion and this sort of thing from  
18 occurring in the first place?

19 MR. FOX: Well, I think, of course,  
20 you have to put it in a contractual form so far as  
21 the contractors are concerned, but I think in this  
22 particular instance we will go a lot further than  
23 we have in the past and outline to the contractors  
24 exactly what we have in mind in terms of controlling  
25 the erosion.

27 So far as monitoring it, we will  
28 do that ourselves. We are not going to let the  
29 contractor do the monitoring, I can assure you,  
30 because he will never have a problem. We will look





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1 after that one ourselves.

2  
3 THE CHAIRMAN: Do we have any  
4 questions from anybody in the audience at this  
5 point concerning C.P. Rail's proposals? C.P. Rail,  
6 I believe you have a comment.

7 MR. FOX: I would just like to refer  
8 to last night's session, Mr. Chairman, if I may.  
9 Dr. Ross at that time was questioning Mr. Gallacher  
10 on what information had been given to towns and this  
11 sort of thing from the Environmental Panel, I believe  
12 it was Dr. Ross.

13 I would like to tell you what has  
14 been done, not through the Environmental Panel, but  
15 through C.P. Rail. We made a number of media  
16 releases last year on the jobs that were going on as  
17 to the start, as to the progress, where they were and  
18 so on and so forth, and these were carried on radio,  
19 television, newspapers, including, I might add, the  
20 Globe and Mail.

21 In addition to that and probably more  
22 important, we provided an on-the-spot PR person  
23 at Revelstoke throughout last year's construction  
24 season, and he was kept in Revelstoke during the  
25 whole of the season. As a matter of fact, they  
26 rotated him every two weeks and he had all the  
27 necessary information. He contacted the media and  
28 anybody who was interested in those things, he had  
29 the information to provide. That was done last year.

30 THE CHAIRMAN: I believe there may



10

be some more questions from the Panel. Bill Ross,

DR. ROSS: One of the concerns

that was raised was the issue of bears. In this case I am thinking of them outside of the work camps.

I guess perhaps I should first direct the question to Mr. Gallacher on behalf of Parks Canada. I gather in the past carcasses of animals have been deposited in the Stoney Creek area and this has attracted grizzly bears to the area.

I think we heard last year that this practice had been stopped or was being stopped. I wonder what the current status of that practice is and any comments you might have on grizzly bear problems which have occurred in that area.

MR. GALLACHER: We actually have not had any grizzly bear problems. We have not had any interface with the humans in that particular area. The area was used as a disposal yard and grizzlies were observed in the area.

What we have done now, since we put the access road in there, we have located another area for disposal of carcasses and that is up by the bridge on Mount Tupper. It is above the east portal of the Connaught Tunnel. There is an area up there on that old roadway, and we are using that now to dispose of carcasses. That is also a grizzly bear habitat.





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they learn fast and forget slow. Are grizzly bears still sighted in the vicinity of the Stoney Creek area that was used in the past, and I guess what I am leading to in particular was were there any encounters or bear problems at all in that area this year linked to the surface route, the access road being prepared -- not this year, but last year, rather.

11 DR. ROSS: Mr. Fox, do you know of  
12 any?

13 MR. FOX: I never heard of any  
14 bear problems. Nobody even saw one to the best of  
15 my knowledge.

DR. ROSS: Thank you.

THE CHAIRMAN: Any more questions  
from the Panel?

20 MR. TENCH: We will be speaking  
21 about noise probably in Calgary from the ventilation  
22 equipment and the subject of 55 decibels has been  
23 used as a sort of guide point. If it is found that  
24 these fans are producing more noise, a more  
25 objectionable noise, Mr. Fox, do you have any other  
26 attenuation possibilities in that plant if you have  
27 to cut this noise down any further?



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1 problem.

2 If we get into that, certainly we  
3 will have to do more attenuation.

4 MR. TENCH: Would you have any idea  
5 of what form this would take? Would it be more  
6 buildings or would it be ---

7 MR. FOX: I prefer to let the  
8 experts answer that question. That is beyond my  
9 capabilities. I can assure you if they exceed whatever  
10 it is they specify, God help them.

11 MR. TENCH: I presume you would like  
12 that last remark off the record.

13 MR. FOX: Mr. Levy can perhaps answer  
14 that for you if you would like to have an answer at  
15 this time.

16 MR. LEVY: My name is Sam Levy. I  
17 represent Parsons, Brinckerhoff, Quade and Douglas.

18 Our firm has performed the noise  
19 analysis and I can assure you that the measures that  
20 have been taken in evaluating the estimated noise  
21 levels have been, to the best of my knowledge,  
22 extremely conservative and that we believe there is  
23 considerable conservatism within our analysis.  
24 However, if in the event the criteria is not satisfied  
25 there are provisions for lining the various ducts in  
26 the ventilation building and also lining the  
27 walls of the ventilation building.

28 These provisions have not been  
29 included in our analysis, and therefore, we have



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1                   the capability of providing them some time in the  
2                   future.

3                   MR. TENCH:   That is good. So that  
4                   we would not be faced possibly in the future with  
5                   having to deal with too much noise and then having  
6                   as an ultimate to have to deal with too much building  
7                   sticking up over the trees?   In other words, you  
8                   would not want to extend that building as part of  
9                   an attenuation process?

10                  MR. LEVY:   No, we would not.

11                  THE CHAIRMAN:   Unless we have any  
12                  more questions from anybody in the audience on noise,  
13                  perhaps, Dr. Ross, you have some other questions?

14                  DR. ROSS:   I guess these questions  
15                  deal also with the vent shaft, not so much with the  
16                  noise from it but rather with the investigations for  
17                  it.

18                  I was a little bit puzzled and I  
19                  am still a little bit perplexed about some of the  
20                  comments that were made in the foundation investigations  
21                  so this may be as good a time as any to raise them.

22                  In the report of Thurber  
23                  Consultants, it is suggested that the site should  
24                  be investigated and compared to alternatives. If  
25                  I understand it, C.P. Rail is in fact proposing not  
26                  to study any further alternatives at all but rather  
27                  to put the vent shaft exactly where we visited this  
28                  morning, in fact. That is correct. Is this  
29                  recommendation by Thurber Consultants that alternatives



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be compared. Is that simply something that was done last fall?

MR. KLASSEN: Do you have the page  
number of the report?

DR. ROSS: My notes say it is  
Part 2 in the Synopsis, but I seemed to have grabbed  
the wrong copy here so I could not find it, but the  
specific notes I have is that it is suggested that  
this site be investigated and compared to alternatives  
Synopsis of Part 2 of the Ventilation Shaft Site  
Investigations.

13                   While you are at it on page 31 there  
14                   is a further note which makes recommendations for  
15                   foundation studies for the head house. Again, I am  
16                   wondering if particular geotechnical problems were  
17                   anticipated by Thurber Consultants in making that  
recommendation? That one is page 31.

19 MR. KLASSEN: Is it in the summary conclusions; would that be where it would be?

21 DR. ROSS: The only note I have is  
22  
23 Part 2, Synopsis.

23 MR. KLASSEN: We drilled test hole  
24 82-1 first, which was the first site that was proposed.  
25 There were problems with that site and we went to 82-2  
26 and it was better. The comment was just made to  
27 consider in terms of economics which one was better,  
28 but the site was better. We have selected that  
29 site, and it was proposed to do a water well pump  
30 test there which we have done last fall.



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1 DR. ROSS: I guess, Dr. Buck, was  
2 there anything particular that you had concerns  
3 about that would have led you to suggest looking at  
4 other alternatives?

5 DR. BUCK: Well, I think the point  
6 being that at both of the sites there was ground  
7 water encountered, and of the two, the test hole '82-2  
8 was considered preferable but the water well  
9 investigation was recommended and should be part of  
10 the total evaluation, and that water well investigation  
11 was initiated last fall.

12 DR. ROSS: Do you have any  
13 continuing concerns about the current site in terms  
14 of its viability?

15 DR. BUCK: Well, it's not a  
16 question of liability; it is a question of design  
17 information, design information for the design of the  
18 shaft.

19 DR. ROSS: Then moving on to page  
20 31, the recommendation for the foundation study, that  
21 is the same concern, that is just want to have  
22 enough information for foundation design?

23 My notes say page 31 there is a  
24 recommendation for foundation study for the head house

25 DR. BUCK: That has subsequently  
26 been done.

27 DR. ROSS: I see. Finally, on  
28 that matter, I could not find in the documents that  
29 we received an indication of why that vent site



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1                   was so far from the tunnel. Has the tunnel been moved  
2                   to get it nearer because I notice that in the latest  
3                   map I found that the tunnel had vanished from the  
4                   map, which I took to mean that it was no longer where  
5                   it used to be. I gather, at least somewhere I think  
6                   I have heard that it has been moved to get closer to  
7                   that vent site?

8                   MR. FOX: Yes, what we did, Dr.  
9                   Ross, having to move over to the location where we  
10                  are now considering, if we left the tunnel on its  
11                  original alignment, which was tangent, I might add,  
12                  it meant that we would have to provide two cross  
13                  tunnels from the air vent of some 4,000 feet long  
14                  each and it just became really a matter of economics.  
15

16                  By swinging the tunnel around and  
17                  we put a very slight reverse curve in it, two 30  
18                  minute curves, as a matter of fact, and that brought  
19                  the tunnel to the required lateral spacing required  
20                  at the vent shaft and added approximately 600 feet  
21                  to the vent of the tunnel. So that seemed to be the  
22                  correct way to go.

23                  DR. ROSS: I thought that was the  
24                  case. I just wanted to clarify it.

25                  MR. KLASSEN: A conceptual drawing  
26                  of that is on there.

27                  DR. ROSS: Yes. Thank you.

28                  THE CHAIRMAN: George Tench, do you  
29                  have a question?

30                  MR. TENCH: Question for Parks



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1 Canada. The various settling ponds that are needed  
2 to get siltation and other things out of water, they  
3 have now been fairly well defined by C.P. Rail. There  
4 has been quite a lot of discussion and quite a lot  
5 of disagreement in the past on these things. Are  
6 you now in settlement on the location of the settling  
7 ponds?

8 MR. GALLACHER: We are in agreement  
9 with the location of all the settling ponds other  
10 than the one for the vent shaft, and we really do  
11 not have a handle on that yet.

12 MR. TENCH: On its location?

13 MR. GALLACHER: Yes, that is correct.  
14 While I am up here, may I ask a  
15 question of Mr. Fox about the vent shaft? It was  
16 my understanding, Mr. Fox, that that well hole was  
17 to be drilled to a predetermined elevation last  
18 fall. Was that drilled to that particular elevation?

19 MR. FOX: No, it was not, Mr.  
20 Gallacher. That water drill hole was supposed to go  
21 down to the rock surface, which is some 300 feet from  
22 the surface, and they got down to I think it was  
23 194 feet when they got their casing stuck and they  
24 could not get it up and they could not get it down,  
25 and we ended up by throwing a bit of money away.  
26 We have to go back in there and rebuild it after  
27 we get this access road going this summer.

28 MR. GALLACHER: Therefore, we really  
29 do not know what the water capacity or the water





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1 flow is there yet?

2 MR. FOX: Not precisely, but from  
3 the information we got on the initial drilling, we  
4 know it is less than the one that we tried last  
5 summer, which is further down the slope.

6 MR. GALLACHER: Very well. Thanks  
7 very much.

8 THE CHAIRMAN: Have either of you  
9 got any questions at this time? Dr. Ross has always  
10 got a question.

11

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PM -C

1 DR. ROSS: I wonder if you  
2 could enlighten me about that landslide area that  
3 came down on the Trans Canada Highway. To what  
4 extent has there been impact or any results for  
5 the beaver colonies down below the highway down  
6 there? Was there much material that found its  
7 way into that area or did it sort of get stopped  
8 by the highway?

9 MR. FOX: You are referring to  
10 the one that occurred on the highway?

11 DR. ROSS: That is correct. The  
12 one that occurred, I believe in April?

13 MR. FOX: I think most of it  
14 was on the road or adjacent to the road to be  
15 cleared out. I did not see the actual extent of  
16 it personally.

17 DR. GEOFF BUCK: It  
18 is my understanding that most of material stayed  
19 on the highway.

20 DR. ROSS: So not a significant  
21 amount managed to get down?

22 MR. D. POLSTER: That was not  
23 quite clear when we saw it today -- it was only  
24 cleared, but there used to be a bunch of material  
25 somewhere and it is now all gone.

26 MR. FOX: There was a truck  
27 that went down into the beaver pond.

28 DR. ROSS: Yes, I understand  
29 and it has now been removed. The erosion of  
30 that area right now is it being monitored at all?



1 It seems to me that that is quite a length of open  
2 area which may cause some further problems -- I am  
3 not sure, but is there any special attention  
4 being given to it now?

5 MR. FOX: Yes, there is, Doctor  
6 Ross. The first thing that we were going to do  
7 was we were fluming that water completely down  
8 the slope in a flume. If you noticed today when  
9 we were looking at it, the flume does not extend  
10 to the bottom of the fill, and that will go down  
11 to the bottom. There is a short ditch leading  
12 away from the fill down the slope and we will  
13 pick that up again in flumes as it passes some  
14 of the flat area and flume it down to the highway  
15 culvert. That will carry the water.

16 Now the second thing we are  
17 doing and it has not been done yet but it will be  
18 done, and as a matter of fact it is organized  
19 to be very shortly, is that that whole area will  
20 be rehabilitated in terms of plantings and seedings.

21 DR. ROSS: That was my next  
22 question. I have forgotten exactly where the  
23 alignment is relative to that?

24 MR. FOX: From the highway, it is  
25 roughly 300 feet away.

26 DR. ROSS: But there will be  
27 revegetation efforts undertaken in that area  
28 this year?

29 MR. FOX: Yes, very definitely.



1 DR. ROSS: And what will these  
2 revegetation efforts consist of?

3 MR. FOX: I'm sorry?

4 DR. ROSS: What will the revegeta-  
5 tion efforts consist of?

6 MR. FOX: I think they will  
7 probably start about August to pick up the late  
8 summer rainfalls.

9 DR. ROSS: And that is grass and?

10 MR. FOX: Grasses and shrubs.

11 Doctor Ross, would you like a further comment?  
12 I have Mr. Polster here and he is the guy that is  
13 supposed to be doing it and as a matter of fact  
14 I understand he has already seeded it. So he can  
15 perhaps explain a little more to you than I can.

16 MR. DAVE POLSTER: Yes, I do not  
17 know when you were looking at it that -- we were  
18 out there a couple of weeks ago and put some seed  
19 down on the site. That has only caught in the  
20 areas that were quite moist, and we have not had  
21 any rain since. So most of the seed is just  
22 sitting there on the surface. You can actually  
23 see it if you look closely, and, of course, it has  
24 caught where it is moist. We are going to be doing  
25 this summer, testing some techniques for  
26 stabilization of steep slopes and that is a very  
27 steep slope there, which we hope will be successful  
28 using reinforcing meshing and soil stabilizing  
29 sprays that sort of thing in combination with the



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late summer seeding.

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MR. TENCH: Coming out of the Park coming east in towards Golden a lot of the slopes on the highway have quite a lot of grass on them. Has there been, to the best of your knowledge, a seeding program on that stretch of highway?

3

MR. POLSTER: Yes, the Highways Department regularly conducts revegetation efforts - the B.C. Department of Highways along their right-of-ways. In some places it is more successful than others.

4

MR. TENCH: Are they just using grass or we noticed quite a few --

5

MR. POLSTER: No, it is just a straight grass legume seeding, and it is a pretty standard mix that they use throughout the whole Province actually. So in some places it does better than others. The trees have regenerated naturally.

6

THE CHAIRMAN: While we have got you up here at the front, if I understand you correctly, you are going to be experimenting with revegetation methods in that area of very steep slopes from Stoney Creek along to the east portal of the short tunnel. What I was wondering was in view of the fact that there had been a little slippage there this summer, and we have had a relatively dry spring I understand, I am a little

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1 concerned about the potential for some more  
2 slippage given a wet spring possibly next year.  
3 Why would you not want to move in fairly quickly  
4 and revegetate to stabilize the soil all the way  
5 along there? If, as I understand it -- do you  
6 have some more terrain movement to take place in  
7 that particular area, or I thought you were going  
8 to put a tressel structure in which was going to  
9 follow basically the route you have now? One of  
10 my assumptions in there must be wrong. The  
11 basic question is why would you not revegetate  
12 the whole lot right now to avoid problems?

13 MR. FOX: When you mean "right  
14 now", you mean right now. Today. Well, I think  
15 this is, and Dave Polster can correct me if I am  
16 wrong -- I am not a planting expert -- you know  
17 I fool around in the garden and things like that  
18 like the rest of us, but I would suggest that  
19 now would not be the time to decide to seed those  
20 slopes, because you are coming into the dryer  
21 season of the summer and you will not get any  
22 germination.

23 Now we carried out, Dave, I think  
24 last June on the Mountain Creek slopes up at the  
25 existing main line; we seeded that about this  
26 time of year and we did not get any growth  
27 whatsoever until about a month and a half later  
28 when we finally got a rain on it, and we could be  
29 faced with the same thing. So really what we  
30 are trying to do is get in there about August when



1 we know we are going to get some of the later  
2 summer rains and you will get a good growth.

3 THE CHAIRMAN: Okay, well say  
4 August -- whatever is a good time to do it, why  
5 would you not go all the way along on that particular  
6 section where you are going to put that viaduct  
7 tressel structure in?

8 MR. POLSTER: If I might just  
9 comment, that is what we are planning to do.  
10 We are going to be testing those specific techniques  
11 that I mentioned, the netting and the application  
12 of soil stabilizing spray primarily on the cut  
13 slopes as there is a concern that we do not want  
14 the cut slopes eroding further away from what is  
15 now the center line.

16 The fill slopes will probably be  
17 high growth seeding while we are in there as well.  
18 There is not a big area and we will probably do  
19 that as we pull back.

20 There is some concern that in  
21 order to build the viaduct through there there  
22 is going to have to be some straightening of that  
23 turkey trail through there. So we will see how  
24 much we can actually reclaim now and how much  
25 would have to wait until after it gets straightened  
26 a bit.

27 MR. TENCH: Could I ask for some  
28 details on what would happen, Mr. Fox, when you  
29 put that tressel in, and probably to simplify the  
30



1       thing it will have an upstream leg or an uphill  
2       leg and a downhill leg.         Are you going to get  
3       both those leg foundations in from the present  
4       access road or will you digging in a second  
5       access road along the length of tressel?

MR. FOX: Oh, I think we can get  
it in from the existing access road. If we go  
to steel-type tressel, which really requires four  
concrete pads, one for each leg; it will have  
four towers with a short span, and then the other  
spans hook onto it, they will be something of the  
order of eight by eight feet square, and, of course,  
it will have to go down below frost, and there  
will be some excavation, and they will be tied into  
the existing slope by the means of proper anchors  
so they do not go slip and sliding down the slope.

I think the equipment to do that  
would be relatively light and we could always  
lower it down that slope at the spots required.  
Hopefully we can spot those foundations so that  
they will come on the knoll or the nose of the knolls  
there where we have the best soil conditions and span  
the ravines. We are in the process of working  
out that spacing on that basis.



any slippage from the sides, it will either be dealt with or reseeding will take place, but eventually you would not need that access road?

MR. FOX: Not that I can foresee. it is always nice to have an access road into a bridge but that is not much of an access road.

My own thinking is and I will have to defer my comments to my soils experts, but my thinking is we would take off not the bottom of the fill but the top of the fill where it comes up to meet what is now the travel surface and pull that up and try to get that back up against the upper slope, and then seed the whole thing. I think doing it that way we would be able to flatten that out a little bit and that will stop the erosion.

THE CHAIRMAN: I think that just about answers the question mainly that I had and that is that you see the existing slope in there as being pretty well left as it is with the exception of smoothing out where you have your access road?

MR. FOX: That is right.

THE CHAIRMAN: So, therefore, you can go in and seed this fall if you like for a large part of the work along that particular right-of-way?

MR. FOX: Yes, between Stoney Creek and the east portal area that will be seeded up slope, down slope, and the up slope will also have



1                   this reinforcing mesh applied to it to hold  
2                   everything in place, hopefully. This is what  
3                   we assume it will do, we hope it will do, but  
4                   once the tressel foundations have been built and  
5                   the structure itself erected, we will have no  
6                   further use of that road; then we do the  
7                   smoothing off and do the final seeding, et cetera.

8                   THE CHAIRMAN: Okay, in the book,  
9                   the Red Book that you gave to us, I thought that  
10                  the main reclamation work was not going to take  
11                  place until next year -- that your construction  
12                  schedule was to put in those foundations for the  
13                  tressel and to do the reclamation work? What I  
14                  am hearing now is that you are going to get  
15                  started on the reclamation work this fall --

16                   MR. FOX: Oh, yes.

17                   THE CHAIRMAN: -- and you are  
18                  going to complete the reclamation next year.

19                   MR. FOX: Do not misunderstand  
20                  me now. What we are doing immediately is sufficient  
21                  reclamation work to keep those slopes where they  
22                  are supposed to be, and when we get the foundations  
23                  of the structure in place and the structure itself  
24                  in place, then we go in smooth off -- that road  
25                  will disappear. We will fill that back, taking  
26                  off the hump, and flattening out the lower slope,  
27                  and then completely rehabilitate it.

28                   THE CHAIRMAN: Okay, fine. I  
29                  think we have that sorted out, yes.





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PM-C

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MR. KLASSEN: Under the 1983 program here in Number Three, it states that between Stoney Creek and the short tunnel both cut and fill slopes will be revegetated under the 1983 program.

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THE CHAIRMAN: Okay, fine. How are we for coffee for the moment? --

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I think this might be a convenient point at which to take a coffee break and we will be hearing the presentation on wildlife afterwards. So if you would like to join us for a coffee, and if there is any questions, feel free to mingle with us.

---Brief adjournment

---UPON RESUMING AT 8:40 P.M.:

THE CHAIRMAN: As I mentioned earlier on, we are now going to have a presentation from C. P. Rail concerning wildlife issues. There has been a report tabled with us this evening: "Concerns for Ungulate Collision Mortality along New Surface Route". Following the presentation by C. P. Rail's consultant, we will have an opportunity for questions. There are some people that may want to spend a bit of time studying this report. If there is any further comment people want to make at the public meeting, such as Parks Canada, we will have an opportunity to do that in Calgary, and if anybody wants to submit written





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(Hatler)

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1 comments and feels they do not have time to do  
2 that by the time we get to Calgary, we will also  
3 accept those up until the end of the month.

4 Mr. Fox could I ask you to introduce  
5 your consultant and the subject of wildlife.

6 MR. FOX: Thank you, Mr. Chairman.

7 Mr. David F. Hatler will submit a report or a  
8 synopsis anyway on the "Concerns for Ungulate  
9 Collision Mortality along New Surface Route".

10 MR. DAVID F. HATLER (MacLaren  
11 Plansearch Corp.):

12 Mr. Chairman, Panel Members,  
13 Ladies and Gentlemen:

14 For engineering and logistical  
15 reasons highways and railways in mountain country  
16 are commonly located in low lands, often in the  
17 valley bottoms. Coincidentally for biological  
18 and often climatic reasons wildlife often find  
19 these same valley bottoms to be very important  
20 areas, especially seasonally. My subject is the  
21 natural and predictable conflict which arises as  
22 a result of those facts.

23 Specifically in this context I  
24 have looked at the potential for collision between  
25 trains and moose in Beaver River Valley and that  
26 area that is the subject of these hearings.

27 My study, in report form, is  
28 divided essentially in three parts. The first a  
29 comprehensive review of the literature to provide





1           (Hatler)

2           background and prospective for contemplation of  
3           this potential problem. Secondly, it is the  
4           report of the actual field studies which we  
5           undertook during the past several months, and  
6           third, a list of actions and recommendations which  
7           should be considered in mitigating the problem  
8           as identified.

9           There is insufficient time here  
10          tonight to deal at any length with the literature  
11          review other than to list some of the subjects  
12          that were covered. The review itself was in two  
13          parts. The first a review of moose biology.  
14          Of particular interest in the context of this  
15          study is consideration of factors both external  
16          to the animals and internal, intrinsic, which  
17          influence their local distribution. It is important  
18          to understand why they are, where they are at any  
19          given time as the first step -- and whether or not  
20          they have any options in being in those places is  
21          the first step in understanding why the conflict  
22          arises.

23           The factors which appeared to  
24          be particularly worth focusing on were snow cover  
25          as it affects mobility and foraging opportunity  
26          of the animals, food habits, seasonal movements  
27          and distribution, and population dynamics.

28           The moose is a very adaptable  
29          animal, particularly well designed for life in





PM--C

(Hatler)

1                   northern eco systems. It has behavioural and  
2                   physical adaptations particularly for dealing  
3                   with snow but yet it is very -- in almost any  
4                   study of moose there will be reference to snow as  
5                   an exceedingly important factor in the animal's  
6                   biology. It is a recurring theme. Snow as it  
7                   affects nutrition, foraging opportunities; snow  
8                   as it affects, in many cases, the actual numbers  
9                   in the populations; snow as it affects movements;  
10                  and snow as it affects habitat selection.

12                  The second portion of the  
13                  literature review concerned an actual search of  
14                  the literature for information for studies  
15                  pertinent to railway collision mortality of wild  
16                  ungulates. There is very little literature  
17                  on this subject surprisingly. The primary paper  
18                  on the subject is actually an unpublished document  
19                  from Alaska written in the mid-fifties. A recent  
20                  study by a consultant commissioned by the Federal  
21                  government studied transportation mortality in  
22                  Canada's National Parks. That particular study  
23                  was oriented primarily to highways but there is  
24                  some railway information there as well.

25                  The subjects which were covered  
26                  in this look at the literature relating to railway  
27                  collision mortality included the extent of the  
28                  problem, and just to give some examples: in the  
29                  Alaskan study which I mentioned -- in the winter  
30                  of 1955-56 a minimum of 425 to 450 moose were



1                   (Hartier)

2                   killed on the section of railway, the Alaska  
3                   Railway between Anchorage and Fairbanks. There  
4                   have been many reports in recent years in the last  
5                   decade of 200 to 300 animals being killed on the  
6                   C.N.R. line between Prince Rupert and Jasper. In  
7                   1968 it was a particularly bad year and it  
8                   was estimated up to 600 moose were killed on that  
9                   section of line.

10

Within the literature review

11

I have covered some aspects of the nature of the  
12 problem describing how it comes about. Again with the  
13 effects of snow there is a very definite  
14 correlation. The years of highest kill are almost  
15 always the years of very high snowfall, and this  
16 goes for all species not just moose.

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The distribution of kills in  
railway mortality there tends to be a clumping in  
areas where animals are killed regularly, and  
large areas where they are not killed, this suggests  
that there is more likely to be an ability to  
mitigate some of these problems since they seem to  
be local. That clumping of kills is almost  
certainly related primarily to the fact that the  
animals are distributed that way primarily along  
valley bottoms, and where the railway or whatever  
disturbance comes closest to those areas that  
they select during that time period will determine  
where the clumping occurs.





PM-C

1                   (Hatler)

2                   Time of day is a factor in  
3                   railway mortalities. In the Alaskan study which  
4                   is the only really detailed study where they were  
5                   determining a variety of factors, and they had  
6                   people riding the trains looking at train-moose  
7                   interactions. They were out on the rail line  
8                   weekly looking at carcasses, taking them apart,  
9                   so that it is the most complete to date, again in  
10                  the mid-1950's, and it was quite evident that  
11                  more were killed at night than during the day,  
12                  and substantially more.

13                  Section H Composition of Railway  
14                  Kills, another subject. There was no correlation  
15                  in the Alaskan studies. Animals were killed  
16                  pretty well in relation to their occurrence in  
17                  the population.

18                  Behavioural aspects, there were  
19                  two or three references dealing with what actually  
20                  happens when a moose and a train are lined up together.  
21                  I myself have ridden the cab of an engine and have  
22                  seen that. It might be worth mentioning here  
23                  that in the Alaskan study 101 such interactions  
24                  were observed, and in approximately 20 per cent of  
25                  those interactions the moose actually was killed.  
26                  So that they do escape most of the time but occasionally  
27                  they do not.

28

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1                   (Hatler)

2                   Effects on populations. In most  
3                   cases even if we had the very best mortality information,  
4                   we often do not know the living population and that  
5                   is hard to make that step of determining just what  
6                   that mortality means to the population, but we will  
7                   talk about it a little bit in relation to the  
8                   Glacier situation.

9                   What the literature review tells  
10                  us is that railway collision mortality of large  
11                  wild ungulates certainly does occur and in some  
12                  areas sometimes it can be that relatively large  
13                  animals can be lost in a very short time. The  
14                  implications for such populations are obvious.  
15                  There are also implications for the railway. I  
16                  came across one reference to a front page article  
17                  in the Prince George Citizen of January, 1974,  
18                  which described three C.N.R. derailments in  
19                  three days all as a result of collisions with  
20                  moose.

21                  The general problem is clearly  
22                  very real but as I indicated earlier only minimal  
23                  attention has been received by researchers and  
24                  managers to date on it.

25                  Now to the specifics of the  
26                  Glacier National Park situation. Our studies  
27                  focusing on the problem specifically were primarily  
28                  in the form of monthly field trips from December,  
29                  1982 through to April, 1983. They involved  
30                  intensive helicopter surveys on each of the field





1                   (Hatler)

2 trips with complimentary ground observations as  
3 appropriate. We also had supplementary information  
4 from other studies prior to that general study  
5 period. I will not go to any great detail on  
6 methods beyond that. You will find it in the  
7 report.

8                   The first item that I will talk  
9 about relating to the Glacier Park moose is our  
10 ultimate count of the numbers and composition of  
11 the sub-population that occupies the Beaver Valley.  
12 Moose apparently arrived in that general area,  
13 in the Glacier Park area, in the early 1930's.  
14 They were not there prior to that time. Much of  
15 B.C. at that time was being colonized. Much of  
16 northern B.C., which I am familiar with, the moose  
17 were just arriving in that area as well.

18                   They have never been intensively  
19 studied in Glacier and are not regularly surveyed.  
20 In the synthesis of all of our various counts and  
21 walks through the area, we arrived at a minimum  
22 population, sub-population in the Beaver Valley  
23 of ten animals. This was one large bull, one  
24 small bull, three females with calves and two adult  
25 females without calves. We saw no obvious yearlings  
26 in that amongst those ten suggesting that previous  
27 years total production had been lost, and there is  
28 some evidence that the winter of 1981-82 was a  
29 very severe winter. So that is maybe part of the  
30 explanation.



1                   (Hatler)

2                   Now we did see as well or accounted  
3                   for a minimum of five other animals in Glacier  
4                   Park but outside of the general study area. So  
5                   we saw ten in intensive study within the study area,  
6                   a minimum of five in the areas adjacent. The  
7                   relationship of those particular animals to the  
8                   Beaver Valley population is now known but it  
9                   suggests that it is not a closed population in the  
10                  Beaver group.

11                  A few comments about the ecology  
12                  of moose in the Beaver Valley. Obviously, one  
13                  winter study is not going to tell us everything.  
14                  The description of the local ecology of any  
15                  species can only be accomplished by detailed  
16                  observations over several annual cycles, but again,  
17                  we come down in considering the ecology of moose  
18                  in Glacier National Park to a consideration of  
19                  snow and all the brochures on Glacier and Mount  
20                  Revelstoke National Park emphasize snow as being  
21                  a dominant and major feature of the whole park  
22                  situation in this area.

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1                   (Hattler)  
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3                   We did get some weather information,  
4                   particularly snow pack information from the Glacier  
5                   Station, which did confirm that the 1981-82 winter  
6                   was a colder winter with much deeper snows than  
7                   the 20 year average for the area, and the most  
8                   recent winter, the winter of our studies, the 1982-83  
9                   winter was warmer than normal and with considerably  
10                  less snow.

11                  We found in April of 1982 in a study  
12                  which was not part of the present operations, but we  
13                  were still looking at moose in the area, we found  
14                  two carcasses of winter-killed animals following  
15                  that severe winter. We saw none in all the  
16                  intensive studies this year.

17                  Now, an important point about these  
18                  snow figures, the peak snow depth in the severe winter  
19                  was around 210 centimeters; last year it was around  
20                  140 centimeters. A review of all the studies on  
21                  moose that have dealt to any degree with snow suggests  
22                  that the critical level for moose is 80 centimeters.  
23                  So even in the very mild year this year, we are  
24                  dealing with an exceedingly heavy snow fall situation  
25                  that the moose in that area have to contend with.  
26                  Again, I have had a lot of experience with moose in  
27                  northern areas. I have never seen moose contend  
28                  with snow like they do in Glacier. They do not walk,  
29                  they swim. They do not touch bottom in their tracks  
30                  during parts of the year until the snow consolidates





D-2

1                   (Hatler)

2                   sufficiently.

3                   They are restricted for very long  
4                   periods to very small areas and we found small  
5                   cedars that were almost totally denuded of the  
6                   bark. They are not subsisting in high style but  
7                   they make it.

8                   Our observations, both summer and  
9                   winter, indicated in an absolute sense there is a  
10                  lot of food available in Glacier Park, but much of  
11                  it is unavailable during that critical winter period  
12                  because of their inability to travel long distances  
13                  to obtain it. In the interest of keeping the  
14                  time period for the presentation down, I will not  
15                  deal at any length with the food observations other  
16                  than to indicate that we did follow the new right-  
17                  of-way prior to clearing and there was very little  
18                  sign of moose use at that level of the Valley prior  
19                  to the clearing. There was some, but almost no  
20                  browsing especially in areas where there was heavy  
21                  browse potential, and only an average of 1.1 moose  
22                  days of use along the whole line. That is based on  
23                  droppings, and studies in Alaska indicate that they  
24                  defecate about 17 times a day if any of you would  
25                  like to pocket some nickel knowledge.

26  
27                  Seasonal movements. It seems  
28                  apparent that the moose which wintered in the Beaver  
29                  Valley had not moved far from their summer range.  
30                  I do not believe that the animals are strongly



D-3

1                   (Hatler)  
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3                   migratory in that area, and in fact I think there  
4                   are compelling reasons why they should not be.

5                   In terms of distribution, the  
6                   Mountain Creek area is certainly the area of greatest  
7                   activity during the winter period, and of the ten  
8                   animals which I mentioned as our minimum population,  
9                   approximately seven of them occurred at some time and  
10                  five of them almost all the time in the vicinity of  
11                  Mountain Creek, from that down to the pusher station.

12                  It seems likely that it can only be  
13                  discovered by marking animals, that most directional  
14                  seasonal movements in the Beaver Valley are parallel  
15                  to rather than perpendicular to the river.

16                  Railroad collisions in the Beaver  
17                  Valley. The data compiled in the study while I  
18                  mentioned earlier regarding the transportation  
19                  mortality of wild ungulates in Canada's national  
20                  parks indicated that for the four parks which have  
21                  railways within their boundaries, train kills  
22                  represent from about 10 to 30 percent of the  
23                  transportation-related mortalities recorded.  
24                  Glacier is on the low or ten percent end of that  
25                  range. The figures from that report average out to  
26                  about 58 reported railway kills per year in those  
27                  four parks, of which about ten percent are moose,  
28                  and the average for moose kills per park ranges from  
29                  0.3 to 3.2 animals per year. The 0.3 figure is  
30                  Glacier; 3.2 is in Banff.





D-4

1                   (flatler)

2                   While these figures would seem to  
3                   be insignificant, they may be somewhat misleading  
4                   in that the actual total kill in at least some of  
5                   the areas is probably less than the reported kill --  
6                   or the actual kill is larger than the reported  
7                   kill in at least some of those areas. The ten  
8                   year average may mask the importance of the kill in  
9                   any one year, and finally, the kill could be  
10                  important out of proportion to numbers if for some  
11                  reason some particular sex or age class was  
12                  selected in the kill, some behaviourally important  
13                  individuals, for instance.

14                  Only three moose kills are known  
15                  to have occurred on the existing rail line adjacent  
16                  to the Beaver Valley since at least 1970. That is  
17                  in the past 13 years, and there appears to be  
18                  no reported kills on that line since at least 1979.  
19                  Those three all occurred in early winter, one in  
20                  November and two in December, and this would be while  
21                  the snow is building up to that critical level.  
22                  They are still quite mobile at that time. After  
23                  the snow restricts their movements, they are  
24                  certainly less vulnerable because they are not  
25                  getting out onto the area where they would be hit.

26                  The new rail line being lower down  
27                  the slope and therefore closer to the primary moose  
28                  activity in the Valley may well have the potential  
29                  for more frequent conflicts with moose than the





D-5

(Hattler)

existing line, but most of the problem seems to have occurred on the Mountain Creek, and there the difference is slight. In fact, not far down below Mountain Creek the two lines come together.

Our observations indicated fairly little use of the cleared right-of-way during this past winter. There were in December, two animals did cross the new right-of-way and moved up the slope as far as the existing track and then meandered back down again. Later in the winter, I believe it was in February, one bedded down on the new right-of-way for a short period, but most of the activity was in the Valley bottom again.

Possibly, if the new right-of-way had a rail bed and were plowed and the animals gained access that they would travel along it more. They move relatively little now primarily because under normal circumstances they cannot; if the opportunity presents itself, they will.

Impacts on the population. As I indicated earlier, the degree to which the moose observed in the Beaver Valley constituted closed population this is not known, but it seems likely that there is some input and also some animals leaving from the outlying animals which we have seen. So it is probably not a closed population. The chances for recruitment from elsewhere do exist. However, it also appears that because of the snow





D-6

1           (Hattler)

2           situation, that animals tend to be quite sedentary  
3           in the area.

4                          Our -- I guess I should say my  
5                         feeling is that it is probably best to take the  
6                         worst case situation than to suggest that any input  
7                         from the outlying area is a bonus and consider that  
8                         sub-population as closed for the purposes of the  
9                         discussion.

10                         Certainly, the Beaver Valley  
11                         population is of considerable importance to the  
12                         Park in the context of being adjacent to the travelling  
13                         public.

14                         Let us talk again about the mortality  
15                         of the animals and the viability of this population.  
16                         The information that we were able to come up with  
17                         indicated that between 1962 and April 1982, a 20  
18                         year period, a total transpotation-related mortality  
19                         of moose in the Glacier Park area was 33 animals,  
20                         of which 27 were killed on the highway and six on  
21                         the railway. The addition of two highway-killed  
22                         male calves to that list in the fall of 1982 last  
23                         year raised the total to 35.

24                         The average is less than two per  
25                         year, but again, what can we do with averages. It  
26                         seems apparent that a minimum of seven animals died  
27                         between October 1981 and the same time the following  
28                         year. In a population of what we now consider to  
29                         be a minimum of ten, clearly a population cannot



D-7

1                   (Hatler)

2                   sustain that kind of mortality for very long.

3                   More importantly, if in fact  
4                   there are only two bulls in that area, the loss of  
5                   those two could temporarily arrest local recruitment.

6                   Much of the focus on the railway  
7                   problem is on mortality but it should be mentioned  
8                   that other impacts are possible. Occasionally moose  
9                   run long distances ahead of speeder cars or trains  
10                  and especially during the winter period when they  
11                  are on marginal or negative energy budgets, this can  
12                  be very detrimental. They can die or become  
13                  vulnerable to other mortality factors just from the  
14                  physiological stress involved.

15                  It is apparent to me that to ensure  
16                  the continued viability of the Beaver Valley  
17                  sub-population of moose, it will be essential to  
18                  both reduce the present rate of highway mortality  
19                  and prevent excessive increase of direct or indirect  
20                  railway mortality. My mandate here was only to  
21                  address the railway aspects, but certainly it cannot  
22                  be enough. The highway problems by far the greater  
23                  is probably increasing with the increased traffic  
24                  flows.

25                  Finally, we come to the suggested  
26                  mitigation measures and these have been covered  
27                  in sort of a systematic way. What I want to do is  
28                  just refer to them with the background information  
29                  that we have on what actually is going to be going on.



D-8

1                   (Hatler)

2                   One of the facts that has to be  
3                   brought out is that we cannot mitigate a particular  
4                   problem without clearly understanding the problem,  
5                   and again, the railway mortality situation is not  
6                   something that we have in hand. The Alaskan studies,  
7                   again, as I have indicated, documented a number of  
8                   different types of problems, different types of  
9                   circumstances, which led to mortality.

10                  In the Glacier area, we have only  
11                  a minimal amount of information, primarily from  
12                  skiers               since people have begun to take  
13                  records in the area; the bit of intensive work that  
14                  we have done this year, but we certainly do not know  
15                  for sure what migration routes, if any, exist, what  
16                  areas are really the greatest potential problem.  
17                  For this reason, I cannot recommend any particular  
18                  mitigation structures, no particular fences or  
19                  underpasses or overpasses, things of that nature  
20                  in that there is just inadequate information to  
21                  place them properly in any particular place. There  
22                  are areas certainly where we can predict that we  
23                  are more likely to have a need for such structures than  
24                  others. But more information is going to be  
25                  required.

27                  The question of whether or not all  
28                  animals killed are reported comes up in any  
29                  consideration of the railway moose mortality  
30                  problem. There does not seem to be any real future





D--9

(Hattler)

in getting into the argument of whether or not it occurs. Certainly reporting is a necessity and that is probably my major recommendation, is that a system which is very simple, requires only a phone call and say, hey, we killed a moose today which will enable the appropriate people, probably from Parks, to get out and look at the animal, to look at the circumstances by backtracking and certainly that, in itself, is not enough either because again, the frequency of kills appears to be so low that it might take 30 years for the next three kills. But sightings of moose and of the sign that they make is certainly available and regular patrols by someone is certainly going to be a necessity to determine the areas of the greatest moose activity other than Mountain Creek, which I think everybody can right now agree is the area of greatest concern.

Mountain Creek is again where the three most recent railway kills have occurred, one in 1973 and two in 1979. It is an area where many of the highway kills appear to occur. It is the area where we documented most of the moose activity during the winter period.

Some of the other recommendations: the vegetation along the right-of-way can sometimes be a problem. If the reclamation or the revegetation of the area in certain areas is grown





D-10

1           (Hatler)

2           back to plant species attractive to moose, it could  
3           draw them in. I think that does not have to be  
4           a problem in this case because of the nature of  
5           the terrain. Mountain Creek, again, is the area of  
6           primary concern.

7           Manipulation of train speed was  
8           found in the Alaskan studies to be one of the most  
9           important things that could be done. There were two  
10          adjacent areas; the area with the most moose had the  
11          fewest kills because in that area terrain required  
12          that the train travel only 30 miles an hour or less.  
13          In the adjacent area the train was up to 50 miles an  
14          hour and they killed more moose. Now, in this  
15          particular area I understand that on the new right-  
16          of-way we are dealing primarily with uphill traffic  
17          and the train speed there is to be somewhere around  
18          15 miles per hour. It seems like already that is  
19          an advantage for the moose.  
20

21           Manipulation of horns and headlights,  
22           something that was tried in Alaska. There was some  
23           indication that if the horn blast was timed  
24           properly, primarily, in fact, if the horn blast was  
25           withheld until the last minute that the moose would  
26           get off the track and would be saved, whereas  
27           frequent horn blasts from the time the animal is  
28           first seen can be detrimental in a number of ways.  
29           Sometimes it can make the moose mad and there are  
30           observations on record where the moose turned around



D-11

1                   (Hatler)

2                   and charged the train. There is also the problem  
3                   of the animal realizing that something is coming,  
4                   getting off the tracks, finding that the snow is too  
5                   soft to run in and then going back to what he thinks  
6                   is security of the solid track bed. And I suspect  
7                   that there are train crews out there who have tried  
8                   various things and who know what to do, and I would  
9                   like to see some way of communicating with these  
10                  people in a systematic way to get the best kind of  
11                  information of that sort that we can get, train and  
12                  safety control in that way.

13                  Snow removal is a very important  
14                  thing to be done. Obviously snow removal is part  
15                  of the track maintenance, and I suspect in this  
16                  case, particularly along the steep slope south of  
17                  Mountain Creek -- and I refer to west as south  
18                  because that is what it is on the map, so that is  
19                  what I am referring to -- there the snow will be  
20                  thrown over the side repeatedly and a burm is  
21                  going to build up there that is going to be hard  
22                  to get up through from below. So that probably will  
23                  help.

24                  Encouraging use of areas away from  
25                  the track. Now, this is something that has not  
26                  been tried, I do not believe, in any detailed  
27                  fashion, but to me it may be the thing that will  
28                  save the day in the Mountain Creek area. This is  
29                  not only for the railway, this is for the highway  
30                  as well.





D-12

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(Hatler)

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The animals there have access to the highway and to the railway by the existing trails and I believe that if trails were packed by snowmobiles or small tracked vehicles farther downstream, staying on the side of the river opposite the railway, that it would attract and hold animals, those few that occur down in that area, in those areas rather than drawing them up onto the tracks. Now, I have made some suggestions as to how that could be done, what some of the concerns would be, but it is something that I think ought to be tried.

I think probably at this point it would be best to close it and ask for questions.

THE CHAIRMAN: Thank you for a very interesting dissertation. I guess I have a question and maybe it will throw things open.

You were talking primarily about moose. I notice the title of your report was ungulates. Did you run into any other sorts of ungulates or was moose the only one you found that you could deal with?

MR. HATLER: Well, moose are certainly the primarily concern there. We saw three elk in April which had just come down the river and they certainly did not occur along the rail line at all during the past winter.

We found droppings on two occasions



D-13

1                   in the area of the new right-of-way near Stoney  
2 Creek. But there is certainly no established  
3 population as such and nothing that really can be  
4 addressed, and there are deer in the area but  
5 infrequently. We did see mountain goats in the  
6 vicinity of the existing Stoney Creek tressel but  
7 no indication that they got below that.

8                   THE CHAIRMAN: Any questions from  
9 anybody in the audience concerning this presentation,  
10 any wildlife people present?

11                  Panel, any questions? Bill Ross.

12                  MR. TENCH: Is this report just  
13 as recent as now? Have C.P. Rail or Parks Canada  
14 had a previcw of the contents? Is it fair to  
15 ask a few questions on what either party would do  
16 under certain circumstances?

17                  MR. FOX: We have reviewed it in  
18 the Calgary office last week, Mr. Tench.

19                  MR. TENCH: Have Parks had a chance  
20 to see this, and the question I would ask is this  
21 method of creating tracks by artificial means, have  
22 you given this any thought, and if you have, how  
23 would you go about it and who do you think should  
24 pay for it?

25                  MR. GALLACHER: Well, we have not  
26 reviewed the report at all. We just received it  
27 tonight, but we will be reviewing it and we will  
28 have a letter to the Panel by the end of June.

29                  As far as making tracks to guide

30





D-14

1                   the moose along the Valley bottom or the slopes,  
2 we do not make it a practice using the snowmobiles  
3 in the Park for the simple reason it disturbs the  
4 animals. So consequently, the cure may be worse  
5 than the disease, so to speak. I think we would  
6 have to be very careful there.

7                   But we will certainly look into it.

8                   MR. TENCH: Have you had any  
9 experience before of this artificial track making  
10 being put into effect?

11                  MR. HATLER: Well, I have made a  
12 lot of artificial tracks with my own snowshoes in  
13 the last year. I do some trapping and I have used  
14 snowmobiles, and the animals do tend to follow those  
15 tracks regularly, both deer and moose in the area  
16 that I am working in, and caribou certainly like it  
17 as well. Again, it is the path of least resistance,  
18 and during the time of year when they are trying  
19 to conserve energy and they have not -- in most  
20 cases they cannot consume enough forage of sufficient  
21 quality to even maintain. They are losing all  
22 winter long, so that anything they can do to conserve  
23 energy they will, and I suspect that this tracking  
24 that I am suggesting, if done -- and it is something  
25 that should be done by people who know the habits  
26 of the animals and who can do it sensitively enough  
27 not to disturb them and you do not want to do it  
28 in the same place each year because, you know, you  
29 are going to be exploiting the vegetation by the  
30





D-15

1 moose in those different areas.

2 So that there is a fairly large  
3 area to work with there, some of which is outside  
4 the Park, but the moose that are working in that  
5 area outside of the Park are part of the Park  
6 population. So I do not think there would be  
7 any danger to the animals. I think that if it worked  
8 it could only be positive.

9 MR. TENCH: In your review, Mr.  
10 Fox, have you looked at this provision of vegetation  
11 in areas adjacent to it? Have you had the chance  
12 to talk this over with your other consultants?

13 MR. FOX: Yes, to a degree, and  
14 our soil or reclamation expert does have some concerns  
15 because naturally he wants to get vegetation to grow  
16 on those slopes, but we really have not come to  
17 a conclusion at this time. It has got to be looked  
18 at.

19 MR. TENCH: Is it possible you could  
20 do this in time for us to get some information on  
21 this subject back before we get to writing the final  
22 report?

23 MR. FOX: I would think that should  
24 be possible, Mr. Tench, yes.

25 THE CHAIRMAN: I wonder if I could  
26 ask whether some of the revegetated areas would  
27 in fact or could in fact act as an attraction for  
28 the moose. I am not sure whether you are familiar  
29 with the sort of grasses and so on that is being





D-16

1 proposed. Could you see that potentially as being  
2 a problem, that a nice, fresh grass area is growing  
3 and this moose coming home to graze on that particular  
4 area?

5 MR. HATLER: No, I do not think that  
6 the grass would attract them much. They do utilize  
7 that kind of forage occasionally, but they use  
8 other things more often, and certainly in the  
9 wintertime when the main problems occurs, that is  
10 going to be under the snow.

11 That particular problem, you know,  
12 it is just one that was mentioned, it is one that  
13 has been a problem in other areas because the natural,  
14 successional cycle has brought in a lot of forage  
15 for the animals that they did not have before and  
16 they are travelling along the entire line.

17 Now, in this particular case,  
18 we recognize it as a conflict arising from two  
19 different requests, one, protect the moose, one,  
20 protect the scenery, and decisions have to be made on  
21 this. My own feeling, you know, I mention it because  
22 I think it has to be mentioned but I do not think  
23 that the moose problem is that great that it has  
24 to supersede the other.

25 The Mountain Creek area is the  
26 most sensitive and there my understanding is that  
27 most of the plants that they expect to reclaim  
28 are not attracted to moose.

29  
30 THE CHAIRMAN: Then you would not



1 want to be planting the sort of things that might  
2 attract the moose, though?

3 MR. HATLER: Pardon me?

4 THE CHAIRMAN: You would not want  
5 to be planting the sort of plants that would attract  
6 the moose particularly?

7 MR. HATLER: Well, in some areas,  
8 if those are the best ones from a reclamation point  
9 of view you might have to.

10 THE CHAIRMAN: Have you and the  
11 reclamation people talked to come to some mutual  
12 agreement on what is acceptable to both of you?

13 MR. HATLER: Again, my place is  
14 only to indicate that that could be a problem if  
15 it was a continuous type of situation or if it were  
16 placed in a -- I do not think that the plants are  
17 going to attract the animals from long distance.  
18 It is only if it is a continuous band, which it is  
19 not likely to be.

20 THE CHAIRMAN: The sort of thing  
21 I would have in mind is if you have got a right-of-  
22 way, a nice path for the animal to go along and nice  
23 areas to feed off on either side, it might tend to  
24 be attractive.

25 MR. HATLER: Yes, this is why I  
26 would suggest it is important to not invite them at  
27 Mountain Creek.

28 MR. TENCH: Question for Parks.  
29 This is getting desperately close to winter feeding





D-18

1 by artificial means, perhaps. Is this going to cause  
2 you any concern?

3 MR. McKNIGHT: Mike McKnight. Is  
4 it going to cause us any concern as ---

5 MR. TENCH: As a policy, you, Mike,  
6 mentioned today that Parks did not go for issuing  
7 bales of hay to elk and this sort of stuff. We  
8 are possibly getting close to doing this very thing  
9 by planting special areas for them. Would this cause  
10 you any concern that you see at the moment? I  
11 realize you have not had much time to think about  
12 this, but if you want more time to think about it,  
13 if you would cover it in your letter.

14 MR. McKNIGHT: No, that is fine.  
15 It is certainly a concern that is arising now  
16 at Lake Louise where we have now a wintering population  
17 of elk right along the right-of-way and that is  
18 primarily because some of the grasses are starting  
19 to establish themselves fairly well.

20 With the moose thing, I am not sure.  
21 I think that the snow depths in the area would  
22 almost preclude attracting the moose to the right-of-  
23 way for at least a goodly number of years until those  
24 plants had established themselves to the point where  
25 they were able to grow above the snow line during the  
26 winter.

27 The summer attraction I would doubt  
28 because I think there is much more favourable  
29 habitat available in the Valley bottom.



D-19

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MR. TENCH: Thank you.

2

MR. McKNIGHT: While I am up I have  
3 one more question. When we did a lot of the  
4 wildlife work in Banff National Park, we identified  
5 the alluvial fans of a lot of the rivers as being  
6 very important wildlife habitat, and one of the  
7 concerns that I had and we have discussed with the  
8 wildlife people was that the new rail line bisects  
9 a number of streams and it is right along the top of  
10 those alluvial fans. I am wondering whether your  
11 observations indicated that those fans were important  
12 to the moose and our concern was that we were  
13 building a very inviting pathway from one fan to  
14 the next and would we be really encouraging the moose  
15 to make more use of those fans and thus be subject  
16 to considerably more mortality than we are presently  
17 experiencing because the original line is much  
18 higher.

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MR. HATLER: Yes, I indicated

that I had -- that there were some areas that we could predict would be more likely to be problem areas than others when I was briefly mentioning fences and such things, and I have as one of the figures in the report a sort of a diagram of possible fencing requirements in the future, and in this case it is not a continuing fencing but it is short leading fences on each of those areas of deciduous growth, and again I would say that it is only appropriate to consider using those with more information. But certainly those are the areas where (a) you can see the activity because it is deciduous. You fly over the cedar and you cannot see into it and you walk through it and it is much more compact but there is an indication that the animals are using that, the coniferous areas as well, and perhaps in this environment more than we would expect but I do agree from all my background that it is always those deciduous areas that seem to me to be important, and that if I am tune with the moose that is the way it is.

24 MR. McKNIGHT: Our observation --  
25 we skied along the right-of-way during the winter  
26 on two or three occasions and we would go down the  
27 creek drainages, and we were certainly aware of  
28 much more moose activity just in those fans, and  
29 as I say, the concern is that we are building a  
30 very nice travel route, a very convenient travel



1 route and quite close to the --

2 MR. HATLER: Yes, but most of  
3 the use of the fans is on the lower areas. They  
4 do tend to meander up and then back and forth on  
5 those areas, and they certainly do use them but the  
6 existing line crosses all of those fans as well.  
7 Certainly at a higher level --

8 MR. McKNIGHT: It is much higher  
9 than I wonder whether the energy expenditure  
10 necessary to climb up to that line in order to be  
11 able to make it up --

12 MR. HATLER: It is still pretty  
13 high where they are. It is high at both places  
14 but there is certainly a possibility.

15 MR. McKNIGHT: It is a concern  
16 and we will have to be aware of it.

17 MR. HATLER: Those are the areas  
18 that I have suggested need watching.

19 DR. ROSS: I think I would like  
20 to have a closer look at the document before I  
21 have some questions on it. You will be in Calgary,  
22 will you, Mr. Hatler?

23 MR. HATLER: I was not planning  
24 to be but that may be changed.

25 DR. ROSS: At this time the only  
26 question I have, I guess, is to Mr. Fox, and that is  
27 you have indicated in your Red Book, if one might  
28 use that term, that there are a number of mitigative  
29 measures to which you are committed. I do not  
30





1 recall which of these were mentioned in there or  
2 did this document come too late for inclusion.  
3 More to the point: which of the mitigative  
4 measures proposed in this document by Mr. Hatler  
5 does C. P. plan to implement at this time?

6 MR. FOX: Well, first of all the  
7 train speeds there are very, very low. So  
8 certainly that is no problem for us. Insofar as  
9 snow build-up, we can certainly handle the down  
10 slope side quite easy with the use of spreaders,  
11 which we use every year -- it is just a matter of  
12 kicking a wing out and we can kick that snow right  
13 off the top of the rail bed down the slopes except  
14 in one cut, which is at Mountain Creek. So that  
15 is an easy thing to do and really what that says  
16 is that if the moose does get on the right-of-way  
17 he does have a way of escaping without getting into  
18 horrendously deep snow. You know, as soon as he  
19 takes a few steps he is going to be in, but whether he  
20 can get back up that slope again that is perhaps  
21 a good question.

22 The use of horns and headlights,  
23 although I guess all you can do is trial and error.  
24 Certainly right now our crews use a series of  
25 whistle blasts when they see wildlife on the right-of-  
26 way and whether they blow too soon or blow it at  
27 the right time, I really cannot answer that and I  
28 guess we would have to do an awful lot of experimenting  
29 just to see what is the right way to do it if that  
30 is of any help. It could be that we could make





1           a survey of our crews and see what we can get out  
2         of that survey. Some might indicate that if  
3         you are within -- I generally go by pole lengths,  
4         which is roughly 140 feet, and if you start blasting  
5         your whistle then they might get out of the way and  
6         stay out.

7                          As I say, I do not know. We  
8         could try to find out. I do not know that you  
9         would get any conclusive evidence on that. There  
10       perhaps would be so many opinions, particularly  
11       from the crews in this particular area, because  
12       I do not think they see that many moose. We could  
13       probably look at other territories where there  
14       are more animals of that type and see what the  
15       experience is in those locations.

16                          DR ROSS: In particular, were  
17       you planning to implement this reporting mechanism  
18       which is --

19                          MR. FOX: We already have in  
20       place a reporting mechanism for kills. We do not  
21       have a mechanism in place for sightings and I rather  
22       doubt that we would want to take that on because of  
23       a number of things, and the first one is that you  
24       will not see them from the tail end of the train,  
25       that is for sure -- they will be gone by the time  
26       the tail end arrives on the scene. The head end,  
27       particularly the engineman, he has got enough  
28       responsibilities now insofar as that train is  
29       concerned. To make your sightings worthwhile he would



1 have to note the -- well, not the precise  
2 location but certainly the location where he  
3 saw these animals and whether they were north or  
4 south or whatever of the track to make any  
5 reporting worthwhile in my opinion.

6 The main problem I have there is  
7 that that fellow is a pretty busy man up there  
8 watching his train and watching his train orders  
9 and signals and things of this nature and I do  
10 not think I would want to suggest to them that  
11 they would have to take on a task such as this.  
12 Then, of course, a telephone call is great but that  
13 is not the way it works in this world. He would  
14 have to submit a piece of paper and the piece of  
15 paper would have to go to somebody else and so  
16 on down the line before it got to Parks Canada,  
17 and I imagine they go through the same procedure.  
18 So I do not know if that would work too well.

19 Certainly insofar as in the future  
20 if we found that the population of moose was such  
21 that they were getting on to these fans that have  
22 been referred to up on the rail lines, we can  
23 follow that and if a fence or some kind of a  
24 training fence is what is required, we could  
25 certainly take a look at that, but right now we  
26 do not know where to put them or what to do with  
27 them, or even if they are necessary

28  
29 THE CHAIRMAN: Any questions  
30 from the members of the audience on this particular  
point?



1                   Is there anything final that  
2 C.P. wants to add on this point before we go back  
3 to questions on a more general nature?

4                   MR. FOX: I do not think so,  
5 Mr. Chairman.

6                   THE CHAIRMAN: Do we have any  
7 questions from members of the audience -- anything  
8 general that has come up this evening?  
9 If you would like to come up to the microphone  
10 and identify yourself?

11                  MR. JULIAN DUNSTER (Ministry of  
12 Forests, Golden): First of all, I would like  
13 to ask C.P. Rail, Mr. Fox, about the power lines.  
14 We have been dealing with B. C. Hydro for a number  
15 of years now to clear a right-of-way from Invermere  
16 to Golden, and we have always been under the  
17 understanding that the take-off would be, I think,  
18 a 69 KV line from that sub-station to be used  
19 for this project, and the right-of-way is now  
20 established, and I have heard from B.C. Hydro  
21 that the project is deferred. There was no reason  
22 given as to why it was deferred.

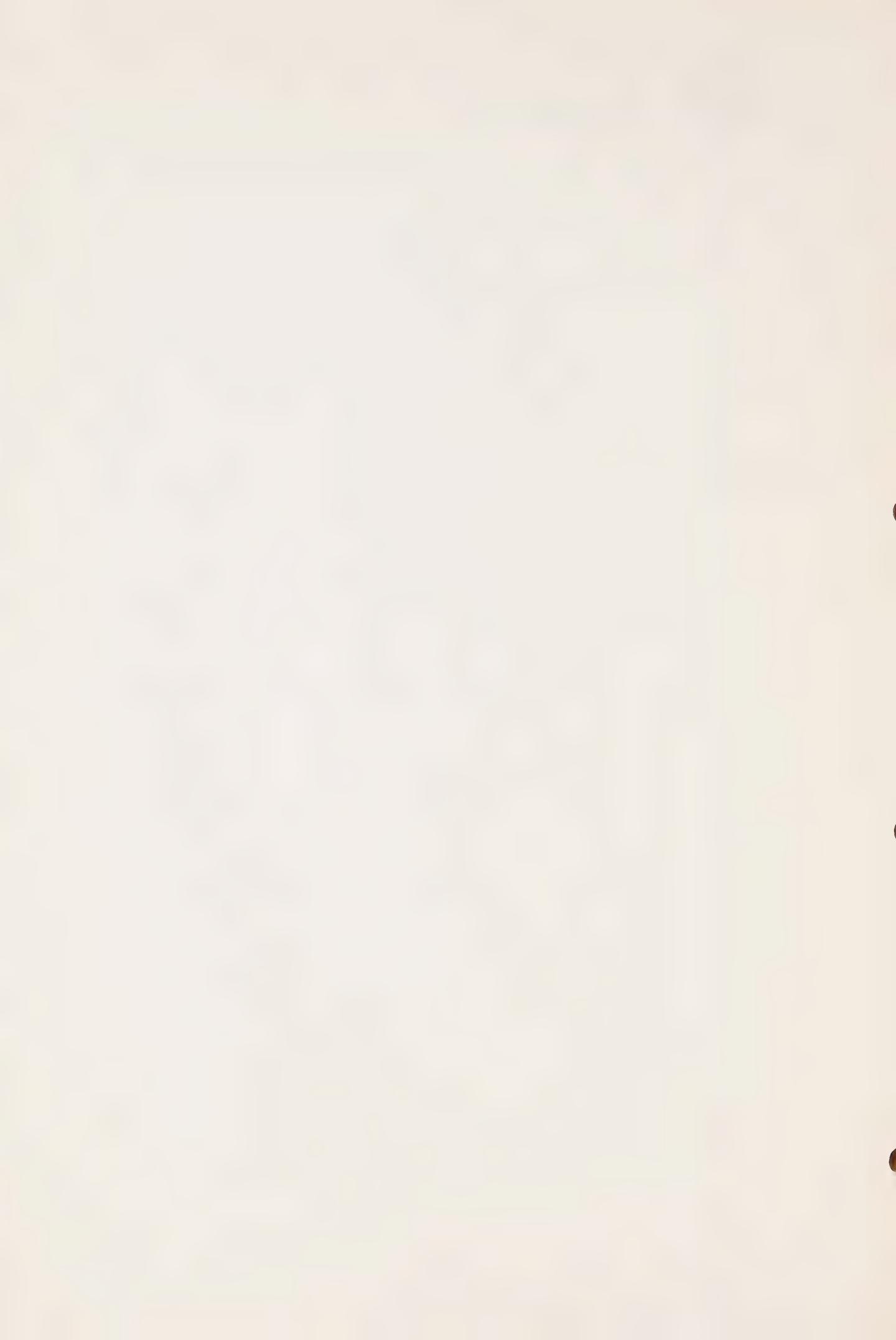
23                  It is a little urksome to me as  
24 a forester that we have cut out a right-of-way for  
25 several -- I do not know how many miles, but  
26 there is a significant loss of productive land for  
27 no particular reason right now, and my question to  
28 C. P. Rail is why have they -- I guess I cannot say  
29 misled B.C. Hydro, but why have they always gone



1 under that assumption and then they changed  
2 at the last moment?

3 MR. FOX: Well, first of all  
4 your information that the line was being built  
5 for C.P. Rail's account is not correct. The line  
6 was being built strictly for B.C. Hydro's account,  
7 and we asked when it was going to be built and  
8 if we could get power from that source. And to  
9 fill you in on the whole story, so you know the  
10 whole story -- you see I personally went and met  
11 with the B.C. Hydro officials in Vancouver last  
12 fall, and tried to determine when that particular  
13 line was to be built, and it was not going to  
14 be a 69 KV line; it was something of the order of  
15 200 and some KV -- 240, it was a very heavy line.  
16 The requirements insofar as B.C. Hydro was concerned  
17 for power in this area told them that they do not  
18 need the line. Now they were quite willing for  
19 me to put up \$20 million and build it for them and  
20 I can bring power in for a hellva lot cheaper  
21 from Revelstoke than build a line for B.C. Hydro  
22 and have them collect money. So as far as I am  
23 concerned, they couldn't deliver the power for me,  
24 and if they cannot deliver the power, I cannot  
25 use it. So I have to go where I can get it and  
26 that happens to be Revelstoke. So that is a  
27 correct story.

28 MR. DUNSTER: Okay, that puts  
29 B.C. Hydro back into the position of being public  
30 enemy number one, I guess.





1 MR. FOX: Well, that was  
2 in the works long before we requested power.

3 MR. DUNSTER: Well, the problem  
4 is you cannot get a straight answer from B.C.  
5 Hydro ever or half the time anyway.

Okay, my second question is not  
as a Ministry person but just as a professional  
forester. I am a little concerned that there  
has been a lot of work done on this ventilation  
shaft and the visual looks very good. Obviously  
you have done your homework there and it is fairly  
well camouflaged in its present site.

I do not know whether you are aware but in this area we have several nasty little beasts which go around eating trees of which one is the spruce bark beetle, and the spruce bark beetle has wiped out a significant amount of timber in Quartz Creek, and Quartz Creek is maybe five, ten miles I would say from the eastern boundary of Glacier National Park. If, or perhaps when the spruce bark beetle starts to migrate westward, are there any measures built into those whole process to cope with the event where the spruce bark beetle would devastate the spruce forests around that ventilation shaft and thus exposing it? Is there anything built in to deal with such a contingency?





1 it is the concern of the people who look after the  
2 forests in this country, I would think.

3 MR. DUNSTER: Okay, but we are  
4 in a National park so it is not under the  
5 jurisdiction of the B.C. Forest Service.

6 MR. FOX: Well, it is under  
7 the jurisdiction of Parks Canada and I guess you  
8 should direct your question to them, because  
9 I certainly cannot help you on the spruce bud  
10 worm.

11 MR. DUNSTER: Perhaps Parks  
12 Canada would like to comment on it.

13 MR. GALLACHER: We realize  
14 the investigation is there and we have brought  
15 this up with our people in the region, a chap  
16 by the name of George Rogers, who is our Chief  
17 Forester, and he has it pretty well in hand. He  
18 makes periodic visits to the area and he has sent  
19 some experts out to check the areas out in Mountain  
20 Creek campground, in particular. I believe he  
21 also dealt with some of your people from the  
22 Revelstoke area.

23 MR. DUNSTER: Okay, on that  
24 subject I would like to suggest that the Panel  
25 maybe take the time to evaluate some of the measures  
26 that are taken by the B.C. Forest Service or a  
27 service anywhere else in Canada to deal with the  
28 spruce bark beetle, and ensure that such logging  
29 operations that C.P. carries out, that clean-up  
30



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1                   and sanitation is carried out to the same standard  
2                   to avoid furthering that epidemic, which is fairly  
3                   close right now.

4                   MR. FOX:   What is it that you do  
5                   with these little insects?   Do you spray for them  
6                   or what do you do for them?

7                   MR. DUNSTER: I do not know.  
8                   I do not think you would get away with that in  
9                   Glacier Park.

10                  MR. FOX:   What are you doing now?  
11                  You say you have got a problem.

12                  MR. DUNSTER: Basically where  
13                  possible we are trying to salvage the timber but  
14                  we also have a trap tree program whereby you  
15                  deliberately put out a baited tree for the  
16                  beetles and then when the beetles are in it, you  
17                  pull the tree out and take it away, but to start  
18                  with before you have got the epidemic there, if  
19                  you can do really thorough sanitation of all the  
20                  logging and not leave high spruce stumps, not leave  
21                  any spruce slash in the area, then you will not  
22                  get -- for a while at any rate, you will not get the  
23                  beetles migrating into the area.

24                  MR. FOX: We hope we can burn  
25                  everything if we can get a permit to burn it.

26                  MR. DUNSTER: I was just curious  
27                  to know what is happening because it could be a  
28                  major problem.





1

DR. ROSS: I am not sure I understand.

2

What you are suggesting is there some particular  
measures in clearing and handling this slash in  
spruce trees that would, if not preclude, at least  
significantly reduce the prospect of the spruce  
bark beetle of penetrating into the area and  
devastating the forest?

8

MR. DUNSTER: Yes, it is  
something we are trying to encourage the licencees  
to do is a very thorough mop-up of the harvesting  
operations. One of the reasons that Quartz Creek  
had a spruce bark beetle epidemic was that the  
slash was not burned and we had some particularly  
high stumps after a winter logging show, and that  
caused the spruce bark beetle to come into the  
high stumps and then it just took off. It was  
a population explosion. So it is just something  
which could be done during the part of routine  
operations.

21

MR. FOX: Well, that is always  
done when you build a railroad. You take out all  
your stumps on the right-of-way and burn them, and  
your slash is burned too. Now and again we have  
trouble getting rid of logs but ---

26

MR. DUNSTER: I guess all this  
goes onto my real cost anyway. I pay for it one  
way or the other.

29

DR. ROSS: Mr. Dunster, do you  
have some documentation of these handling methods





1 that you could provide us with?

2 MR. DUNSTER: I imagine that  
3 you could get it from talking to the Golden office  
4 or probably some of the regional specialists or  
5 even the people down in Victoria, who are their  
6 provincial specialists.

7 MR. FOX: What you are really  
8 suggesting is that you get rid of all the stumps  
9 and slash and logs from the area that you are  
10 clearing, which I presume burning is acceptable,  
11 is that true?

13 MR. DUNSTER: Yes, burning is  
the recommended treatment.

15 THE CHAIRMAN: Any other  
16 general questions? I know Bill Ross has at least  
17 a couple of questions. Perhaps you would like to  
go forward with those now?

DR. ROSS: The first question  
I have deals with the visibility of the vent stack.  
In the Red Book on page 23 you make note that when  
the vent stack facility is viewed from Glacier  
Park, it will not be visible to the naked eye  
because the distance is more than a mile. I do not  
think I understand the logistics of why something  
is invisible because it is more than a mile away.

You also note that when viewed  
from Summit Monument, it would be barely visible  
since it is more than half a mile away. It seems  
that distance and visibility are two separate





issues and I am puzzled about that.

The third point at the bottom  
of the page makes reference to being barely visible  
again because of it being more than 1,200 feet  
away.

I am puzzled because there seems  
to be some -- not entirely inconsistencies, but some  
puzzling explanations linked why things are visible  
or how visible they are.

11 MR. FOX: I think what the basis  
12 of that is you would be looking at -- whatever  
13 structure is visible, you would be looking at it  
14 through trees. Now some trees are shorter than  
15 the others and some are taller if you like. So you  
16 are only going to see little parts of it, and if  
17 you got any movement in the trees, your eyes are  
18 going to tell you you are seeing very much.  
19 That is really what it is telling you. In other  
20 words, if you are looking at an object that is  
21 relatively small at that distance, you are going  
22 to have great difficulty in picking it up.

23 DR. ROSS: My recollection is --

24 MR. FOX: Particularly if I colour  
25 it green.

26 MR. TENCH: And paint some trees  
27 on it!

28 DR. ROSS: My recollection is  
29 that you said the top 10 or 15 feet of that  
30 structure would be visible. Now it was not clear





1 to me whether you were talking about the actual  
2 vent stacks or the building structure.

3 MR. FOX: Just the two little vent  
4 stacks that go up on the edge of the building. You  
5 will never see the roof of the building.

6 DR. ROSS: You will never see  
7 the roof of the building from anywhere?

8 MR. FOX: That is correct.

9 DR. ROSS: Okay, that was not  
10 clear to me and I thought I understood that and  
11 I wanted to make sure that my understanding was  
12 correct.

13 MR. FOX: You will never see the roof  
14 of the building per se at all, Doctor Ross. You  
15 will see the top parts of the two vents which are  
16 roughly at either end of the building.

17 MR. TENCH: I defy you, Bill Ross,  
18 to decide what is the roof and what is part of that  
19 vent structure sticking up there, because they  
20 both look the same as far as I can tell from  
21 the isometric sketch.

22 DR. ROSS: I may or may not be  
23 able to tell but clearly Mr. Fox is because he  
24 just told me I could see one but not the other.  
25 I think that clarifies what I was looking for  
26 there.

27 The second point was simply a  
28 confusion on my part. A year ago the work camps  
29 were sized at 250 persons per work camp and now



they are sized at about 400 persons per work camp.  
I wonder if you could explain to me what has happened in  
the interim to change that?

So under that set of rules I can  
put any contractor's men in any camp I want, because  
we are paying for it. At the camp for the west  
portal, we will have the tunnel crew, and we will  
have the ventilation shaft crew in there; we will  
have a number of our own engineering staff in there;  
we will have surveyors in there, and we will have  
all the camp attendant people in there, plus all  
the supervisory staff for the various contractors,  
and a number of our own inspectors and supervisors.



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So when we added them all up, we came to a substantially higher figure than we had the previous year. Now having said that, I also said let us not have any shortage of rooms, so there is probably a few extra rooms in those camps, for this particular reason: you can live with one or two vacant rooms, but you sure as hell cannot live with situations where you need more rooms and you have not got them, and then it becomes very critical then.

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THE CHAIRMAN: Could I just on work camps follow up on that -- I have not looked at your plans that closely, but what are these fellows going to do for recreation in this area? You told us you are going to try and make it a dry camp. They are not going to get any transportation except once a week to get out, and I imagine they will only spend so much time looking at the scenery. Are there going to be some facilities for them?

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24  
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MR. FOX: Oh yes, there is a recreational facility built into any of these camps, and you have your pool tables, and your television with at least two dishes, so they can get all kinds of stations; you have these -- what do they call those things where you throw your disc up and down the table -- whatever they are called, and ping pong tables. Hell they live better there than they do at home. The only thing they have not got, they have not got the ladies.



THE CHAIRMAN: I think I will pass the question back to you, Bill!

DR. ROSS: This may be partly for you, Mr. Fox, or it may be perhaps for Mr. Gallacher as Chairman of the Environmental Committee. One of the tasks that was assigned to that committee was to ensure that contractors receive briefings on environmental requirements prior to and during construction. I wonder how that was handled in the last year? Were the individual workers given any instruction or briefings or whatever, and would you plan to do that any differently in the future in dealing with contractors than you did in the past year?

MR. GALLACHER: No really we were a bit lax on that particular part of the job. We did propose to C.P. to put a program together and I really do not know what C. P. did with that but we never did get an answer on it. We were going to hire an audio-visual expert --

MR. FOX: You got an answer on it,  
Bill Gallacher, if you remember back a little bit.

MR. GALLACHER: I remember Mr. Fox saying the only guy that is going to spend my money is Fox, but you never did say you were willing to share some.

MR. FOX: I think I can clarify a little bit, Bill. I think it was left this way and I did make that remark, so I will not





1 apologize for it. It was left this way -- that  
2 chap -- I guess Mike you were the guy that dug  
3 him out of woodwork, was supposed to come in to  
4 see me in Calgary and I am still waiting. I have  
5 never yet seen him, and I do not even recall his  
6 name. He came from around Canmore was it not?  
7 I never heard from him.

8 DR. ROSS: The reason for my  
9 question, of course, is I believe you propose to  
10 provide certain briefings to the workers in the  
11 camps especially dealing with bear problems to  
12 make sure, to try and avoid them, and I believe  
13 that Parks -- I am sorry; I am really putting words  
14 in your mouth, but I believe that Parks would  
15 support that sort of precautionary measure, at  
16 least in the case of the work camps ending up in  
17 the parks, and if that is the case, then I am  
18 trying to anticipate how this would be handled given  
19 how it was, or in this case, was not handled in the  
20 past?

22 MR. FOX: Well, insofar as the  
23 past year is concerned, we did not have any camps  
24 to worry about. They all went up to the Glacier  
25 Park Lodge and gave them lots of money, but there  
26 is no problems with camps this past year. We had  
27 a very small work force up there. So really to  
28 follow that line of reasoning there was no need to talk  
29 to the guys about bears around camps, because it  
30 was immaterial. Certainly when the main camps are



1 established that is going to have to be followed  
2 and dealt with.

3 DR. ROSS: But there was one  
4 reason for providing these briefings and that was  
5 that it was recommended by this Panel and approved  
6 by Cabinet, but that is a separate issue, I guess.

7 MR. FOX: I appreciate, Doctor  
8 Ross, what you are saying but if you have not got  
9 a camp there is not much sense of talking to the  
10 men about what they should or should not do in a  
11 camp when it comes to bears until we get a camp  
12 in place.

13 DR. ROSS: That is only one of  
14 the environmental requirements and issues which the  
15 contractors ought to have been briefed on:

16 "prior to and during construction".

17 MR. FOX: That part was covered with  
18 the contractors. It was not covered by the  
19 Environmental Committee. It was covered through  
20 the Implementation Committee.

21 DR. ROSS: Could you elaborate  
22 on what was done then?

23 MR. FOX: It was carried out  
24 with the Environmental Coordinator present, my  
25 supervisory staff present and the contractors  
26 present and the jobs were dealt with insofar as  
27 the impact on environment was concerned.

28 They were certainly made aware  
29 of all of our concerns and what they should or



PM-E

1 should not do, and that was done at the outset.

2  
3 MR. GALLACHER: May I add to that  
4 please? The Foundation Company of Canada, their  
5 supervisory staff, approached us to get a man into  
6 the camp once they had a camp established just to  
7 do that and we were prepared to do that. As a  
8 matter of fact we had a retired warden lined up  
9 for it, but since there was no camps established,  
10 we were at a standstill. We were stymied.

11 MR. TENCH: I would just like to  
12 clarify, Mr. Fox. In other words, you got to the  
13 contractor, the general contractor, to indicate  
14 the sorts of things he would not do with his machinery  
15 in particular, that cause damage. Did it go any  
16 further than the sort of principal of the contracting  
17 firm? Did he line up his crew in turn or did  
18 Parks come in and talk to the actual operators?

19 MR. FOX: I will let Parks answer  
20 that part themselves but I cannot answer whether  
21 they went any further themselves. We dealt with  
22 the contractor's representatives.

23 MR. TENCH: And then they would  
24 be sending in the specification no doubt to start  
25 the ball rolling for this sort of condition?

26 MR. FOX: That is correct. There  
27 was a very strict clause in there about environment  
28 problems.

29 MR. TENCH: Did you have anything  
30 to add to that, Mike, because to put it in the



PM-E

specification that often does not filter down anyway. To talk to the boss of the contracting outfit does not necessarily mean it is going any further either.

MR. McKNIGHT: Yes, very early on I certainly recognized that and I contacted an audio-visual specialist that I was familiar with and the work I was familiar with -- he had prepared these type of programs before. What I had in mind was basically an automated program so that each worker when they came on the site would be herded into a room and sat down and would at least have to sit through this -- you know, how much he absorbed. I felt it was important that it be a very professional program because I think you can do more harm than good if you go at it in a slap-dash manner.

John, in answer to your question, I am afraid to say that the extremely negative response we got from you when it was brought up, I just did not carry it forward at that time. We have gone forward now, Parks Canada, with the proposal because we do construction activities in the National Parks. We are also making a proposal with D.P.W. for a joint funding project rather than just a specific program just for the Rogers Pass project. We are now working towards the type of more general project that could be used for other construction jobs with the idea there may be a short segment



tailor-made to the particular project you are working on.

I still think that would be an excellent tool to get to the workers. As far as the Implementation Committee goes we arranged to have an initial meeting with the contractors whereby we virtually managed that he be prepared to come to the meeting with a work plan. So that we knew the types of things, the types of procedures he planned to use, and during those initial meetings a number of the environmental issues surfaced immediately. The first question was: well, it says in the contract that I cannot do this, does it really mean it? And we were pretty firm in telling them, yes, that that is exactly what it does mean and the issues like these temporary bridges they initially could not believe that we would not let them drive their machinery through the creek. The first thing was, well, how do I get to the other side, and to Mr. Fox's credit he pointed out to me that probably in the past we had been a little bit too liberal with these guys and been a little bit too sympathetic to their problems and he indicated to me that those guys bid on it in good faith and the information was in the contract and we took the position with them that they had first better explore all the alternatives. Do not immediately come back and say, oh, how am I going to get my machinery across to the other side



1 to build the bridge in the first place.

2 So we were really hard on them  
3 initially and then if they had insurmountable  
4 problems, then sort of come back through our  
5 regular meetings and work it out.

6 DR. ROSS: While you are up  
7 there, Mike, we cut you a little short last night,  
8 and one of the things I would have liked to have  
9 pursued with you and will do it now very briefly  
10 at least, is to ask you how you might improve  
11 the Environmental Coordinator position if it were  
12 within your power to do so?

13 Are there certain things that  
14 you would like to -- are there certain powers that  
15 you now lack? Is there expertise that you need  
16 access to but do not have? Essentially, if you  
17 had it to do over again, what would you change to  
18 improve the effectiveness of the position? Not the  
19 salary, the effectiveness.

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MR. MCKNIGHT: Well, I could be a lot more effective if I made a lot more money, but --

THE CHAIRMAN: It is not often a public servant gets handed an opportunity to answer a question like this.

MR. McKNIGHT: Usually it is asked by a guy that cannot do anything about it anyway:

One of the problems I found was attempting to make the punishment fit the crime. One of the only real methods we have to rectify problems sometimes is a shut down in the work, and in a lot of cases that is such a drastic measure, you know, when you are talking about the number of men, the amount of equipment, it seems that it is so drastic that it is very seldom used, and unfortunately or one of the only solutions I have found to it is that you basically end up making a nuisance of yourself, if you like. You go to the project supervisor and say, look, come on out, I want to show you this, we have got a problem here. If it is serious, I have shut down an individual operation until the supervisor gets out there and say, all right, you know, we agreed to do it this way, you have chosen to go and do it another way.

If nothing else, their time is awfully valuable, and they only do that a few times, and they either get extremely annoyed and throw their hard hat in the corner or they start coming around to the sort of things that you want to do.





F-2

1           Generally I have found with them, as I said the  
2 other night, the guys are pretty reasonable men  
3 and they are pretty honourable men, and once they  
4 have told you they will do something, by and large  
5 they do it.

6           That is one of the problems I have  
7 found, though, is that these little recurring  
8 problems, it is difficult to find a solution. I  
9 often thought that a monetary solution might be a  
10 help. You would impose a fine on them, but you  
11 have to be really careful with that because the  
12 punishment would really have to fit the crime there.  
13 If it did not, they would just merely write you out  
14 a cheque for another infringement and carry on,  
15 and that certainly would defeat the purpose.

16           That is not probably a very good  
17 answer, but I certainly found it a difficult problem  
18 to deal with and we have been doing the best we can  
19 with it.

20           DR. ROSS: Well, for the time being  
21 I will let you off the hook, but give some more  
22 thought to that question and if by Calgary you have  
23 some more insights, you can give me a response then.

24           Let me suggest to Mr. Gallacher  
25 that he give some thought to the same question about  
26 the Environmental Committee. We are getting a little  
27 late to pursue it now, but at least that is something  
28 we can think about.

29  
30           MR. MCKNIGHT: I think one of the





F-3

1 things I am looking forward to in Calgary is talking  
2 to your experts because I think they have been  
3 involved in pipeline construction jobs and that  
4 sort of thing, and I would be interested to hear  
5 how it was handled in the projects that they  
6 supervise.

7 DR. ROSS: I have just one last  
8 and I think fairly brief question for Mr. Fox.

9 It deals with the construction  
10 schedule and it deals specifically with the timing  
11 of the surface route construction and laying track.

12 It looks to me, as I read through  
13 the document on pages 49 and 50 under Construction  
14 Schedule that the actual surface route seems to be  
15 finished about June of 1986, which is a good two years  
16 prior to the completion of the rest of the work.  
17 That seems to me to make it quite off the critical  
18 path.

19 MR. FOX: Not really, Dr. Ross,  
20 because we need that railroad in there at that time.

21 First of all, we want to get that  
22 surface route built, particularly up to the Stoney  
23 Creek area so that when we get our foundations in  
24 for the very large tressel we have to build, we  
25 can build it off the railway. In other words, we  
26 will have to bring all our bridge spans in by  
27 railway and then we will actually build it off the  
28 railway.

29 So getting that railroad in place





F-4

is critical, and once we get the tressel in place  
we can get work trains over it, we will then be able  
to deliver hopefully precast panel lining right to  
the tunnel mouth. That is the other thought we have  
in the back of our minds.

Now, I would like to make a remark  
on the last question you gave to Mr. McKnight about  
assistance. I have some thoughts myself on that, and  
I think somewhere in the piece and we have not had  
this in this past year because I guess maybe the  
size of the job, but certainly I think when we get  
into the major construction phase, one thing we should  
have on staff and I am certainly prepared to look  
after it, is a professional environmentalist.

From my observations, and I have  
not made many remarks about this, but from my own  
observations I think that perhaps will become a  
necessity because I feel that people like Mr. McKnight  
and my own people need professional advice from  
somebody that knows the score on environment.

THE CHAIRMAN: The question that  
comes up there is that environment is a very large  
field.

MR. FOX: I am sorry?

THE CHAIRMAN: Sorry, the sound is  
not that good in here.

The environment is a very large  
field. When you say you need a professional  
environmentalist, would you not be looking in fact





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1 for various fields in which you would be looking  
2 for advice and assistance?

3 MR. FOX: I do not think so.

4 THE CHAIRMAN: Maybe you could be  
5 more specific as to what sort of questions ---

6 MR. FOX: Well, what I am looking  
7 at is a chap, say a professional, a professional  
8 insofar as he has gone through the professional  
9 universities in the fields of study that he should  
10 have taken or did take and he has had some real  
11 good experience in the field and knows from actual  
12 experience in construction if you do this, what the  
13 effect will be before you do it so we can get some  
14 proper, good professional advice. That is what I am  
15 looking for.

16 THE CHAIRMAN: You are really looking  
17 for a hybrid, then, somebody that knows construction  
18 and the environment field.

19 MR. FOX: That is right, and these  
20 people are available. They are available right now  
21 by the dozen, and that is the type of guy I think  
22 would be an immense help to us in that particular  
23 sphere of operations.

25 THE CHAIRMAN: Are there any  
26 further questions, comments from members of the  
27 public here tonight? If not, I think, do you  
28 have any final comments you would like to make,  
29 Mr. Fox?

30 MR. FOX: I do not think so, thank





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1 you, Mr. Chairman.

2 THE CHAIRMAN: Well, I would like  
3 to thank you all for coming along this evening. We  
4 have had a full discussion, and we will be  
5 proceeding to Calgary tomorrow where we will be  
6 going into details of various technical points that  
7 have come up in these sessions, plus some new ones.  
8

9 Thank you again for coming along  
10 and thank you, those that asked questions or made  
11 presentations. Good night.  
12

13 ---Whereupon the hearing adjourned at 10:10 p.m.  
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